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SUPPLY CHAIN RISK MANAGEMENT STRATEGIES AND FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN NAKURU COUNTY

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THIS DISSERTATION IS SUBMITTED TO THE SCHOOL OF BUSINESS AND LEADERSHIP STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF BUSINESS ADMINISTRATION (MBA) FROM ST. PAUL'S UNIVERSITY

NOVEMBER, 2024

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DECLARATION

This dissertation is a product of my own work and is not the result of anything done in collaboration. It has not been previously presented to any other institution. I agree that this dissertation may be available for reference and photocopying, at the discretion of the University.

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RECOMMENDATION

We confirm that this dissertation has been submitted by our approval as the research supervisors.

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DEDICATION

I dedicate this dissertation to my family. You have been a pillar of strength during my studies. Thank you for your unending support.

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ACKNOWLEDGEMENT

I take this chance to express my gratitude to the Almighty God for his mercy and for bringing me so far. Additionally, I want to express my sincere gratitude to my supervisors for their assistance and support thus far in this project.

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ABSTRACT

The manufacturing sector in Nakuru County has faced significant financial performance challenges in recent years, with several key players either reducing operations or shutting down completely. These financial performance issues have been exacerbated by weak supply chain risk management strategies, which have left these firms vulnerable to disruptions such as fluctuating input costs, unreliable suppliers, and logistical challenges. Therefore, the study sought to assess the effect of supply chain risk management strategies on financial performance of manufacturing firms in Nakuru County. Specifically, the study sought to assess the effect of supply chain risk mitigation strategy, supply chain risk monitoring strategy, supply chain risk avoidance strategy and supply chain risk transfer strategy on financial performance of manufacturing firms in Nakuru County. The study was guided by the Agency Theory, Six C's Model and Transaction Cost Economics Theory. The study adopted descriptive research design. The unit of analysis was 52 manufacturing firms in Nakuru County. The unit of observation was 52 supply chain managers and 52 finance managers from 52 manufacturing companies in Nakuru County. Since the study population was manageable, the study did a census study of the 52 manufacturing firms. The main data collection instrument for this study was structured questionnaire. The study's content validity was improved by consulting experts, especially managers. Internal consistency was used to assess the reliability of the study and Cronbach's Alpha values of 0.7 or more was acceptable. Quantitative data was analyzed by utilization of Statistical Package for Social Sciences. Descriptive and inferential statistics were employed in the study. After analysis, quantitative data was presented in form of tables. From the correlation analysis, the study concluded that there was a moderate positive and statistically significant correlation between supply chain risk mitigation and financial performance of manufacturing firms in Nakuru County ($r=0.473$; $p<0.05$). The study also concluded that there was a strong positive and statistically significant correlation between supply chain risk monitoring and financial performance ($r=0.541$; $p<0.05$). Further, the study concluded that there was a strong positive and statistically significant correlation between supply chain risk avoidance and financial performance ($r=0.641$; $p<0.05$). Moreover, the study concluded that there was a strong positive and statistically significant correlation between supply chain risk transfer and financial performance ($r=0.741$; $p<0.05$). From the findings, the study recommended that manufacturing firms in Nakuru County should develop contingency plans and regularly assess potential risks in the supply chain which are also crucial to ensure financial stability and performance. In addition, the study recommended that manufacturing firms should implement robust supply chain risk monitoring mechanisms. The study also recommended that firms should focus on proactively avoiding high-risk scenarios in their supply chains. The study suggested that further study should be conducted on the impact of supply chain risk management strategies on operational efficiency.

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TABLE OF CONTENTS

DECLARATION.....ii
DEDICATION.....iii
ACKNOWLEDGEMENT.....iv
ABSTRACT.....v
TABLE OF CONTENTS.....vi
LIST OF TABLES.....viii
LIST OF FIGURES.....ix
ABBREVIATIONS AND ACRONYMS.....x
OPERATIONAL DEFINITION OF TERMS.....xi
CHAPTER ONE.....1
INTRODUCTION.....1
1.1 Background of the Study.....1
1.2 Statement of the Problem.....9
1.3 Objectives of the Study.....10
1.4 Research Questions.....10
1.5 Significance of the Study.....10
1.6 Justification of the Study.....11
1.7 Scope of the Study.....11
1.8 Organization of the Study.....12
CHAPTER TWO.....13
LITERATURE REVIEW.....13
2.1 Introduction.....13
2.2 Theoretical Framework.....13
2.3 Empirical Review.....17
2.4 Summary of the Research Gaps.....25
2.5 Conceptual Framework.....28
CHAPTER THREE.....30
RESEARCH METHODOLOGY.....30
3.1 Introduction.....30
3.2 Research Design.....30
3.3 Target Population.....30
3.4 Census Technique.....31
3.5 Data Collection Instruments.....31
3.6 Data Collection Procedures.....31
3.7 Pilot Study.....32
3.8 Data Analysis and Presentations.....33
3.9 Diagnostic Test.....34
3.10 Ethical Considerations in the Research Study.....36
CHAPTER FOUR.....37
DATA ANALYSIS, PRESENTATION AND INTERPRETATION.....37

ST. PAUL'S UNIVERSITY

St. Paul's University Repository

4.1 Introduction....37
4.2 Response rate....37
4.3 Pilot Test Results....37
4.4 Demographic Information....38
4.5 Descriptive Statistics....40
4.6 Diagnostic Test....50
4.7 Inferential Statistics....53
CHAPTER FIVE....59
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS....59
5.1 Introduction....59
5.2 Summary of Major Findings....59
5.3 Conclusions....60
5.4 Recommendations....61
5.5 Limitations of the Study....62
5.6 Suggestions for Further Study....62
REFERENCES....64
APPENDICES....72
APPENDIX I: RESEARCH QUESTIONNAIRE....72
APPENDIX II: LIST OF MANUFACTURING COMPANIES IN NAKURU COUNTY....76
APPENDIX III: APPROVAL LETTER....78
APPENDIX IV: RECOMMENDATION LETTER....80
APPENDIX V: NACOSTI PERMIT....80
APPENDIX VI: PLAGIARISM REPORT....82

ST. PAUL'S UNIVERSITY

St. Paul's University Repository

LIST OF TABLES

Table 1: Summary of the Research Gaps.....25
Table 2: Response Rate.....37
Table 3: Reliability Test Results.....37
Table 4: Gender of the Respondents.....38
Table 5: Highest Education Qualification Attained.....39
Table 6: Length of Service.....39
Table 7: Position of Employees.....40
Table 8: Supply Chain Risk Mitigation and Financial Performance.....41
Table 9: Supply Chain Risk Monitoring on Financial Performance.....43
Table 10: Supply Chain Risk Avoidance on Financial Performance.....45
Table 11: Supply Chain Risk Transfer on Financial Performance.....47
Table 12: Financial Performance of Manufacturing Firms.....49
Table 13: Multicollinearity Test Results.....50
Table 14: Normality Test Results.....51
Table 15: Autocorrelation Test Results.....52
Table 16: Correlation Analysis.....53
Table 17: Regression Model Summary.....55
Table 18: ANOVA of the Regression Model.....56
Table 19: Regression Coefficients.....56

ST. PAUL'S UNIVERSITY

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LIST OF FIGURES

Figure 1: Conceptual Framework.....28
Figure 2: Homoscedasticity.....53

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ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
GDP	Gross Domestic Product
IoT	Internet of things
JKIA	Jomo Kenyatta International Airport
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
RBV	Resource-Based View
SCRM	Supply Chain Risk Management
TCE	Transaction Cost Economics
US	United States
VRIN	Valuable, Rare, Inimitable, And Non-Substitutable

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OPERATIONAL DEFINITION OF TERMS

Financial Performance	Refers to how well a company manages its financial resources to achieve profitability and long-term sustainability. In this study financial performance was measured using level of revenue, profitability level and sales level.
Manufacturing Firms	Manufacturing firms are businesses that engage in the production of goods by transforming raw materials into finished products through various processes, such as machining, assembling, or chemical production.
Supply Chain Risk Avoidance Strategy	Refers to making strategic decisions to completely avoid risks that could disrupt the supply chain. In this study, supply chain risk avoidance strategy was measured using diversification of suppliers, technology acceptance and strategic alliance.
Supply Chain Risk Mitigation Strategy	This refers to the practice of reducing the impact of potential risks by developing a plan to manage, eliminate or limit setbacks as much as possible. This includes diversifying suppliers, maintaining safety stock, improving supplier relationships, and implementing more robust supply chain management processes. In this study supply chain risk mitigation strategy was measured using supplier diversification, supplier buffering and supply contractual management
Supply Chain Risk Monitoring Strategy	Refers to real-time monitoring of supplier performance, market conditions, transportation, and regulatory changes. In this study supply chain risk monitoring strategy was measured using tracking goods and services, supply and demand trends, production schedules and assessment of delivery timelines.
Supply Chain Risk Transfer Strategy	Refers to shifting the burden of certain supply chain risks to third parties, typically through the use of insurance or outsourcing. In this study, supply chain risk monitoring strategy was measured using contractual agreement, outsourcing and insurance.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financial performance of manufacturing firms is crucial as it directly affects their ability to sustain operations, invest in innovation and compete in the market. Strong financial performance enables firms to generate profits, which can be reinvested into expanding production capacity, improving product quality, and adopting new technologies. It also allows firms to manage costs effectively, meet their financial obligations, and enhance shareholder value (Audax, 2018). Additionally, a stable financial position fosters resilience against economic downturns and external disruptions, ensuring long-term survival and growth. Furthermore, healthy financial performance attracts investors and opens up access to credit, which is essential for maintaining and scaling operations. Ultimately, it drives the firm's contribution to job creation, economic growth and industrial development (Lyngstadaas, 2020).

Supply chain risk management strategies play a pivotal role in shaping the financial performance of manufacturing firms (Sezen et al., 2021). At the heart of this relationship lies the recognition that supply chains are susceptible to various risks, ranging from disruptions in raw material supply to geopolitical uncertainties. Effective Supply Chain Risk Management Strategies (SCRM) are designed to mitigate these risks and safeguard the continuity of operations, thereby directly impacting the financial bottom line of manufacturing firms.

One key aspect of SCRM strategies is the proactive mitigation and monitoring of potential risks along the supply chain. By conducting risk valuations and scenario analyses, firms can anticipate and prepare for disruptions before they occur. This foresight enables them to implement contingency plans, such as alternative sourcing options or inventory buffering to minimize the impact of disruptions on production schedules and revenue streams (Truong & Hara, 2018). Consequently, firms that adopt robust SCRM strategies are better equipped to maintain operational stability and meet customer demand, thereby enhancing their financial performance.

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Moreover, SCRM strategies contribute to cost efficiency and resource optimization within manufacturing firms. By streamlining supply chain processes, improving supplier relationships and enhancing visibility across the supply chain network, firms can reduce operational costs and enhance resource utilization. Furthermore, by effectively managing risks associated with supply chain disruptions, firms can avoid costly downtime, expedited shipping expenses, and inventory stockouts, all of which can erode profitability. As a result, firms that prioritize SCRM not only mitigate potential financial losses but also create opportunities for cost savings and improved profitability over the long term (Kiarie, 2017).

1.1.1 Supply Chain Risk Management Strategies

A supply chain consists of all parties including manufacturers, suppliers, transporters, warehouses, retailers, and customers and, within each organization, all the functions involved, directly or indirectly, in fulfilling a customer request (Gurtu & Johny, 2021). A risk in supply chains is defined as a variation in the distribution of potential supply chain results, their value as well as likelihood (Bode & Wagner, 2019). In order to effectively operate in the marketplace, companies need to control risks within their supply chain (Fan & Stevenson, 2018).

Supply Chain Risk Management (SCRM) involves monitoring risks and mitigating potential disruptions and uncertainties that could impact the smooth flow of goods, services, and information within a supply chain (Pournader, Kach & Talluri, 2020). The goal is to proactively address and manage risks to ensure the resilience, continuity, and efficiency of the entire supply chain. Supply chain risk management practices involve the systematic mitigation, monitoring, avoidance and transfer of potential risks and uncertainties that could impact the efficiency, continuity and overall performance of a supply chain. These practices aim to enhance resilience and responsiveness, ensuring that organizations can proactively address and adapt to various disruptions (Baryannis et al., 2019).

Effective supply chain risk management strategies involve mitigating and monitoring risks,implementing methods for/of avoiding or transferring them, and constituting best practices for overall supply chain management. Supply chain risk mitigation is the practice of reducing the impact of potential risks by developing a plan to manage,

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eliminate, or limit setbacks as much as possible. After management creates and carries out the plan, they monitor progress and assess whether or not they need to modify any actions. By identifying, assessing, and prioritizing risks, and then implementing appropriate strategies, organizations can enhance the resilience and efficiency of their supply chains. Continuous monitoring and adaptation are essential to address new and evolving risks effectively (Munir et al., 2020).

Supply chain risk monitoring refers to an organization's framework for staying aware of its current risk exposure, including the implemented risk management system and any other activities that inform the organization's supply chain risk decisions (El Baz & Ruel, 2021). Risk monitoring allows companies to know the types of risks that affect their operations as well as which strategies best mitigate them (Chaudhuri, Boer, & Taran, 2018). More specifically, risk monitoring in an organization: minimizes risk by identifying it and ensuring that there are defenses sufficient to prevent it (Behzadi et al., 2018).

Supply chain risk avoidance is a risk management practice that involves taking actions to eliminate or entirely avoid exposure to certain risks (DuHadway, Carnovale, & Hazen, 2019). In this context, risk avoidance aims to prevent the occurrence of events or conditions that could negatively impact the supply chain. While complete risk avoidance might not be feasible for all risks, especially those inherent in the business environment, it is a strategy that can be employed for specific and highly impactful risks. The first step in risk avoidance is identifying and assessing critical risks that have the potential to severely disrupt the supply chain. This involves a comprehensive analysis of internal and external factors that could pose significant threats (Schroeder & Lodemann, 2021).

Supply chain risk transfer involves shifting the financial consequences of identified risks to another party (Abdel-Basset & Mohamed, 2020). This strategy is based on the concept of outsourcing or purchasing insurance to mitigate the impact of potential disruptions. By transferring risk, a company aims to protect itself financially and operationally, especially when facing risks that may be beyond its control. Purchasing insurance is a common method of risk transfer. In addition,including risk transfer clauses in contractual agreements with suppliers, logistics partners, or other

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stakeholders can be a strategic approach. Outsourcing certain functions of the supply chain, such as logistics or manufacturing, transfers operational risks to third-party service providers. While this may not eliminate all risks, it can reduce the direct impact on the company's operations (Rostamzadeh et al., 2018).

Manufacturing companies adopt various supply chain risk management strategies. In Germany, manufacturing companies are renowned for their meticulous approach to supply chain risk management. One of the key strategies they adopt is supplier diversification. Maintaining relationships with multiple suppliers, both domestically and internationally, German firms mitigate the risk of disruption from a single source. These companies also prioritize building collaborative relationships with key suppliers, characterized by transparency and trust. This collaborative approach enables proactive risk mitigation and monitoring, ensuring continuity of supply (Norrman & Wieland, 2020). Moreover, German manufacturers leverage advanced technologies such as IoT and AI to enhance supply chain visibility and resilience. Real-time monitoring allows for early detection of potential risks, enabling timely intervention. Additionally, these companies develop robust contingency plans to address various disruptions, outlining alternative sourcing options and crisis response protocols. Overall, German manufacturing companies prioritize proactive risk management to maintain operational efficiency and competitiveness in the global market (González-Ramírez, Gasco, & Llopis, 2021).

In China, manufacturing companies face unique supply chain risks, including regulatory uncertainties and quality control issues. To address these challenges, Chinese manufacturers adopt a variety of risk management strategies. Vertical integration is a common approach, with many companies acquiring upstream suppliers or investing in production facilities to gain greater control over critical inputs (Colicchi, Garza-Reyes, & Kumari, 2020). Scenario planning is another important strategy, allowing companies to assess potential disruptions and develop response strategies accordingly. Diversifying sourcing locations helps to mitigate geopolitical and trade-related risks, while rigorous quality management systems ensure product integrity and customer satisfaction. Additionally, Chinese manufacturers collaborate closely with government agencies to navigate regulatory complexities and geopolitical risks, facilitating early warning mechanisms and

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regulatory compliance. These strategies enable Chinese manufacturing companies to adapt to changing market conditions and maintain resilience in the face of supply chain disruptions (Yang et al., 2021).

Manufacturing companies in the USA face supply chain risks such as transportation disruptions and cybersecurity threats. To manage these risks effectively, US manufacturers employ various strategies (Sezen et al., 2021). Reshoring initiatives are gaining traction, with companies bringing production closer home to reduce reliance on overseas suppliers and enhance agility. Supply chain visibility is another priority, with companies leveraging advanced solutions to track inventory movements and anticipate disruptions. Regular supplier audits and evaluations help to evaluate supplier capabilities and ensure compliance with quality standards. Strengthening cybersecurity defenses is paramount, with robust protocols and employee training programs in place to mitigate the risk of cyberattacks. Additionally, US manufacturers develop comprehensive resilience plans encompassing risk mitigation and monitoring strategies, and crisis response protocols. Collaboration with industry peers and government agencies further enhances resilience planning efforts, ensuring continuity of operations in the face of supply chain disruptions (Son, 2020).

In Ethiopia, manufacturing firms often engage with local suppliers to enhance supply chain resilience (Minot et al., 2019). Proximity aids in quicker response times during disruptions. Moreover, inclusive practices involve engaging with local communities to build support networks and address social and environmental risks. Given the unique risks in the region, comprehensive risk management considers factors like/such as political stability, the infrastructure challenges, and the currency fluctuations. Supply chain resilience and agility is important in mitigating risks and enhancing financial performance for manufacturers in Ethiopia (Boche, Mulugeta, & Gudeta, 2020).

In Uganda, firms are diversifying their supplier base to reduce dependence on a single source, thereby mitigating the risk of disruptions (Barriga & Fiala, 2020). This is done by maintaining optimal inventory levels to act as a buffer against supply chain disruptions and ensure continuity in production. Additionally, these firms aim to conduct comprehensive risk monitoring and mapping of the supply chain to identify

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vulnerabilities and potential disruptions (Jeffer et al., 2021). To enhance these efforts, they are implementing continuous monitoring systems and early warning mechanisms to detect potential risks in real-time, as well as employing scenario planning and simulation exercises to assess the potential impact of various risk scenarios and develop effective response strategies.

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Manufacturing firms in Kenya engage in systematic processes to identify potential risks across their supply chains (Memia, 2018). This involves a comprehensive analysis of various factors that could impact the continuity of operations. Risks may include supplier issues, geopolitical uncertainties, natural disasters, regulatory changes, and economic fluctuations. Firms conduct thorough monitoring of their suppliers to identify vulnerabilities including evaluating the financial health, reliability, and geographical location of suppliers. The goal is to understand potential risks associated with each supplier and establish alternative sourcing strategies if needed (John, 2018).

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1.1.2 Financial Performance

Financial performance refers to the evaluation of a company's overall fiscal health and efficiency in managing its financial resources (Gartenberg *et al*., 2019). It involves assessing various aspects of a firm's financial activities and results over a specific period. Financial performance indicators provide insights into how well a business is generating revenue, managing costs, and creating value for its shareholders. It also indicates the organizational capacity to fully utilize assets realized from its main

primary business to raise and generate profits. In addition, it is used to determine the firm's profit level over a given time (Cho, Chung & Young, 2019).

Measuring financial performance is essential for manufacturing firms to evaluate their operational efficiency, profitability, and overall health. Among the key measures used, revenue growth stands as a fundamental indicator, showcasing a firm's ability to expand sales over a specific period and penetrate new markets. Accompanying this is the gross profit margin, reflecting the percentage of revenue retained after deducting the cost of goods sold. This metric reveals the efficiency of production processes, pricing strategies, and supply chain management, all contributing to overall profitability (Cho, Chung & Young, 2020).

Operating profit margin further delves into profitability by assessing the percentage of revenue that remains after deducting operating expenses, indicating a firm's capacity to generate profits from core operations. Meanwhile, the net profit margin offers a comprehensive view, considering all expenses, including taxes and interest payments, to gauge profitability accurately (Matar & Eneizan, 2021). Return on Assets (ROA) evaluates a firm's efficiency in generating profits relative to its total assets, while Return on Equity (ROE) measures profitability concerning shareholders' equity, both crucial for assessing financial efficiency and shareholder value creation. Additionally, inventory turnover ratio reveals inventory management efficiency, and the debt-to-equity ratio evaluates the firm's capital structure and financial risk. Collectively, these measures provide manufacturing firms with insights to make informed decisions, identify areas for improvement, and drive long-term success in a competitive landscape (Smulowitz, Becerra & Mayo, 2021).

1.1.3 Manufacturing Firms in Nakuru County

Manufacturing firms in Nakuru County play a vital role in the region's economy, contributing significantly to job creation, industrial growth, and the overall development of the area. These firms engage in diverse industries, including agro-processing, food and beverage, chemical production and textiles. Nakuru's strategic location, coupled with its access to key transportation networks such as highways and the Railway, makes it an ideal hub for manufacturing activities. Companies like Menengai Oil Refineries have a notable presence in the region, leveraging the

county's proximity to agricultural resources for raw materials. However, many firms also face challenges such as competition, high operational costs and supply chain disruptions that impact their financial performance and growth potential.

Over the years, manufacturing firms in Nakuru have experienced fluctuating revenue growth rates influenced by changes in consumer demand, market competition, and economic conditions (Kaburu, 2021). During periods of economic expansion, revenue growth has been robust, while economic downturns could lead to slower growth or even decline in revenues. Profit margins vary over time due to fluctuations in input costs (such as raw materials and labor), pricing dynamics, and operational efficiency. Manufacturing firms in Nakuru have recently invested in new technologies and innovation improving production processes, product quality and market competitiveness (Adhiambo, 2023).

Increased investment in research and development (R&D) or adoption of automation and digitalization solutions has impacted financial performance positively in the long term. Some manufacturing firms have explored opportunities for market expansion and product diversification to mitigate risks associated with dependence on specific markets or products (Adhiambo, 2023).. Manufacturing firms have focused on optimizing supply chain management, reducing waste and streamlining processes to control costs and improve the overall financial performance. Manufacturing firms in Nakuru are faced with regulatory changes and compliance challenges that have impacted on financial performance, highlighting the importance of robust risk management frameworks.

Supply chain risk management among manufacturing firms in Nakuru City involves identifying, assessing, and mitigating potential challenges and disruptions that can impact the production process, supply chain, product quality and overall business operations. This process is essential in ensuring the smooth functioning of manufacturing activities and to maintaining profitability and customer satisfaction. Manufacturing operations are vulnerable to a wide range of risks, including economic, technological, logistical, regulatory and environmental factors (Kaburu, 2021).

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1.2 Statement of the Problem

The manufacturing sector in Nakuru County has faced significant financial performance challenges in recent years, with several key players either reducing operations or shutting down completely (Kenya Association of Manufacturers Annual Report, 2023). Firms like Eveready East Africa, which was once a leading battery manufacturer, and the Pyrethrum Board of Kenya, which was a major player in the agro-processing industry, have ceased operations, citing financial difficulties. Other manufacturers in the region, such as KCC (Kenya Cooperative Creameries), have also experienced periods of closure or operational downscaling due to inefficiencies and market challenges. These financial performance issues have been exacerbated by weak supply chain risk management strategies, which have left these firms vulnerable to disruptions such as fluctuating input costs, unreliable suppliers and logistical challenges (Kenya Association of Manufacturers Annual Report, 2023).

Various studies have been conducted on the effect of supply chain risk management on financial performance. For instance, Karani (2022) conducted a study on the effect of supply chain strategies on the performance of manufacturing firms in Kenya. The study concluded that supply chain strategies are significant contributors of manufacturing firms' performance. However, the study focused on supply chain strategies whereas the current study focused on supply chain risk management strategies. On the contrary/ however, the study adopted exploratory design while the current study adopted a descriptive research design. Another study was conducted by Nabukaki and Omwenga (2022) on the effect of risk management strategies on financial performance of Jomo Kenyatta International Airport. The study established that (a) risk reduction strategy(ies) significantly and positively influenced the financial performance of Jomo Kenyatta International Airport. However, the study was focused on financial performance of JKIA. Asikhia (2022) did a study on supply chain risk management and business performance of selected oil and gas marketing companies in Lagos State, Nigeria. The study concluded that supply chain risk management strategy had significant effect on business performance of oil and gas marketing companies in Lagos, Nigeria. The study was, however, conducted in Nigeria oil and gas marketing companies hence the findings might not be applicable in the case of manufacturing companies in Nakuru County. Also, the study used

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secondary data only while the current study was based on primary data. Therefore, the current study focused on the effect of supply chain risk management strategies on financial performance of manufacturing firms in Nakuru County.

1.3 Objectives of the Study

The study was guided by the general objective and specific objectives.

1.3.1 General Objective

To assess the effect of supply chain risk management strategies on financial performance of manufacturing firms in Nakuru County

1.3.2 Specific Objectives

i. To determine the effect of supply chain risk mitigation strategy on financial performance of manufacturing firms in Nakuru County.
ii. To assess the effect of supply chain risk monitoring strategy on financial performance of manufacturing firms in Nakuru County.
iii. To determine the effect of supply chain risk avoidance strategy on financial performance of manufacturing firms in Nakuru County.
iv. To examine the effect of supply chain risk transfer strategy on financial performance of manufacturing firms in Nakuru County.

1.4 Research Questions

i. What is the effect of supply chain risk mitigation strategy on financial performance of manufacturing firms in Nakuru County?
ii. What is the effect of supply chain risk monitoring strategy on financial performance of manufacturing firms in Nakuru County?
iii. What is the effect of supply chain risk avoidance strategy on financial performance of manufacturing firms in Nakuru County?
iv. What is the effect of supply chain risk transfer strategy on financial performance of manufacturing firms in Nakuru County?

1.5 Significance of the Study

The findings of the study are significant to the management of manufacturing firm's since it offers valuable insights into the effectiveness of different risk management strategies, enabling management to make informed decisions to enhance financial

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performance and mitigate risks. the study also helps the suppliers of manufacturing firms with a better understanding of the importance of risk management within the supply chain, potentially leading to improved collaboration and risk-sharing practices, which can ultimately benefit both parties.

Further, the study is beneficial to suppliers since it helps them to improve on reliability and consistency in product availability and quality as a result of better-managed supply chain risks, leading to enhanced satisfaction and loyalty. Policy makers can use the findings to develop or refine regulations and policies aimed at promoting effective supply chain risk management practices, thereby fostering a more resilient and competitive manufacturing sector in Nakuru County. To the scholars, the study contributes to the existing body of knowledge on supply chain risk management and its impact on financial performance, providing scholars with valuable data and insights for further research and academic discourse.

1.6 Justification of the Study

In today's globalized business environment, manufacturing firms are increasingly reliant on complex and interconnected supply chains. This complexity exposes them to various risks, including natural disasters, geopolitical events and economic uncertainties. Understanding how these risks impact financial performance is crucial. Manufacturing firms are highly vulnerable to supply chain disruptions, which can have significant financial consequences. Disruptions can result in increased operational costs, revenue losses, and damage to the overall financial health of the organization.

1.7 Scope of the Study

The study focused on the effect of supply chain risk management strategies on financial performance of manufacturing firms in Nakuru County. The unit of analysis was 52 manufacturing firms in Nakuru County. The unit of observation was 52 supply chain managers and 52 finance managers from 52 manufacturing companies.. Therefore, the total population of the study was 104 respondents. The supply chain managers were chosen as target population because they are directly responsible for managing the flow of goods, information and finances throughout the supply chain. Finance managers, on the other hand, are responsible for overseeing financial aspects

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such as budgeting, financial planning and financial performance evaluation. Since the study population was manageable, census was adopted to include all the 104 targeted respondents. The study was conducted for a period of six (6) months from April, 2024 to October, 2024.

1.8 Organization of the Study

The study is structured into five key chapters. Chapter one provides the introduction, including the background of the study, problem statement, research objectives, research questions, significance, and scope of the study. Chapter two presents the literature review, covering relevant theories, conceptual framework and empirical studies that align with the research topic. Chapter three details the methodology of the study, describing the research design, target population, sampling techniques, data collection methods, and data analysis procedures. Chapter four focuses on data analysis, presentation, and interpretation, where the collected data is processed, displayed using tables or charts, and interpreted based on the findings. Lastly, chapter five offers the summary, conclusion, and recommendations, highlighting key findings, drawing conclusions from the analysis, and suggesting actionable recommendations for future practice or research.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter focuses on the theoretical literature, which includes a variety of theories that support the study topic. The chapter also focuses on empirical literature and the conceptual context, which depicts the interrelationships between the variables and their indicators.

2.2 Theoretical Framework

The study was guided by the Agency Theory, Six C's Model and Transaction Cost Economics Theory.

2.2.1 Agency Theory

Agency theory was developed by Jensen and Meckling in 1976. The theory assumes that there is a principal-agent relationship where conflicts of interest may arise because the agent (e.g., a manager or employee) is expected to act in the best interest of the principal (e.g., shareholders or owners), but may prioritize their own goals. The theory assumes that agents are likely to act in their own self-interest, potentially at the expense of the principal, especially when their interests and incentives are not aligned (Murphy, 2014). To mitigate this, Agency Theory assumes that principals must establish mechanisms such as contracts, performance-based incentives and monitoring systems to ensure that agents act in accordance with the principal's objectives. It also assumes that information asymmetry exists, where agents often have more information about the day-to-day operations than principals, potentially leading to opportunistic behavior if not properly controlled.

Agency Theory offers a comprehensive framework for analyzing the principal-agent relationship within organizations. It recognizes the inherent conflicts of interest between owners and managers, providing a structured understanding of these dynamics. This depth allows organizations to identify potential issues and design appropriate mechanisms to address them (Eisenhardt, 1989). The Agency Theory offers a comprehensive framework for analyzing the principal-agent relationship within organizations. It recognizes the inherent conflicts of interest between owners

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and managers, providing a structured understanding of these dynamics. This depth allows organizations to identify potential issues and design appropriate mechanisms to address them (Murphy, 2014).

However, criticisms of Agency Theory exist. Demsetz and Lehn, (2016) argue that the theory oversimplifies human behavior by assuming individuals are solely motivated by self-interest, neglecting social and ethical considerations. Furthermore, the exclusive reliance on formal contracts and incentives has been criticized for overlooking the role of informal social norms and trust (Demsetz & Lehn, 2016). These critiques highlight the challenges of applying Agency Theory in contexts where human relationships and ethical considerations play a significant role.

The Agency Theory was relevant in explaining the impact of supply chain risk management strategies on the financial performance of manufacturing firms due to the inherent principal-agent relationship. In this context, the principals (owners or shareholders) seek to maximize the firm's profitability and ensure long-term financial stability. However, they rely on agents (managers and supply chain professionals) to implement strategies that mitigate supply chain risks, such as disruptions in procurement, logistics or production. Given that agents typically have more detailed knowledge about the day-to-day operations and potential risks in the supply chain, there exists a risk of information asymmetry, where agents might not always act in the best interests of the principals. For example, agents might downplay or conceal risks to achieve short-term gains or avoid immediate costs associated with robust risk management, which could lead to financial losses in the long term.

2.2.2 The Six C's model

The Six C's Model was developed by Peter Kraljic. The model emphasizes six key factors that influence the effectiveness of supply chain. The first component of the Six C's model is Cost. This entails analyzing the financial implications of procurement decisions and contract management strategies (Farchi & Gidron, 2023). By assessing costs associated with supplier selection, negotiation, and contract implementation, organizations can identify opportunities for cost savings and optimize their procurement processes.

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The second component is Competition, which emphasizes the importance of fostering healthy competition among suppliers to drive efficiency and innovation. Through competitive bidding processes and supplier evaluations, organizations can leverage market competition to secure favorable terms, quality products and competitive pricing. Consistency, the third component, highlights the need for standardized processes and procedures in contract management and procurement. Consistency ensures that contracts are executed efficiently, risks are managed effectively, and compliance with organizational policies and regulations is maintained (Gidron & Shahar, 2020).

The fourth component, Communication, underscores the significance of clear and transparent communication between stakeholders involved in the procurement and contract management process. Effective communication fosters collaboration, mitigates misunderstandings and enhances trust and accountability among all parties. Creativity, the fifth component, encourages organizations to explore innovative approaches to procurement and contract management. By thinking creatively and exploring alternative solutions, organizations can uncover new opportunities for value creation, cost reduction and risk mitigation (Farchi & Gidron, 2023).

The final component of the Six C's model is Control, which focuses on establishing robust governance structures and mechanisms to monitor and manage procurement activities and contract performance. Through effective control mechanisms, organizations can ensure compliance with contractual obligations, identify and address deviations from agreed-upon terms, and mitigate risks that may arise during contract execution. While the Six C's model provides a valuable framework for improving contract management practices and procurement performance, it is not without its critiques. One critique is that the model may oversimplify the complexities of procurement and contract management processes, leading to a one-size-fits-all approach that may not be suitable for all organizations or industries. Additionally, some critics argue that the model lacks sufficient emphasis on factors such as supplier relationships, sustainability and ethical considerations, which are increasingly important in today's business environment (Winaryati & Hidayat, 2020).

ST. PAUL'S UNIVERSITY

The Six C's model is highly relevant in explaining the effect of supply chain risk management strategies on the financial performance of manufacturing firms, as it emphasizes key factors that influence effective supply chain management. The Six C's —Character, Capacity, Capital, Conditions, Collateral, and Control—help firms assess and manage risks associated with suppliers and the broader supply chain environment. For instance, Character evaluates the reliability of suppliers, helping firms to avoid risky partners, while Capacity and Capital assess the financial stability and production capabilities of suppliers, ensuring consistency in operations. Conditions refer to external factors, such as market or environmental risks, which influence the need for risk mitigation and avoidance strategies. Collateral emphasizes the importance of securing assets to buffer against disruptions and Control relates to monitoring and managing the entire supply chain effectively. Together, these factors help manufacturing firms implement strategies such as risk monitoring, mitigation, avoidance and transfer, ultimately improving operational stability and positively impacting financial performance by reducing costs and preventing disruptions.

2.2.3 Transaction Cost Economics

Transaction Cost Economics (TCE), was developed by Williamson in 1979. The theory assumes that economic transactions between parties involve costs beyond the simple exchange of goods or services. These costs can include the expenses related to negotiating, monitoring and enforcing contracts, as well as the costs of managing potential opportunistic behavior by other parties. TCE posits that firms and individuals aim to minimize these transaction costs when deciding whether to perform an activity in-house (internalization) or outsource it to the market (externalization). The theory also assumes that human behavior is characterized by bounded rationality —the idea that individuals have limited cognitive abilities to process information, which can lead to imperfect decision-making—and opportunism, where individuals or firms may act in self-interest, potentially at the expense of others (Coase, 2001).

The strengths of TCE lie in its ability to explain the rationale behind organizational choices regarding governance structures and transaction arrangements. The theory provides a robust framework for analyzing the trade-offs between the efficiency of market transactions and the control provided by hierarchical arrangements

ST. PAUL'S UNIVERSITY

(Holcombe, 2018). Moreover, TCE offers practical implications for contract and organizational design, guiding managers in making governance decisions that minimize transaction costs and maximize firm performance.

The critiques of TCE include concerns about its assumptions of rationality and opportunism, as the theory may not fully capture the complexity of human behavior and motivations (Cuypers et al., 2021). Additionally, some scholars argue that TCE oversimplifies the role of information and uncertainty in economic transactions, neglecting the importance of context-specific factors and institutional arrangements (Rindfleisch, 2020). Furthermore, TCE has been criticized for its static view of governance structures, as it may not adequately account for changes in transaction costs and environmental dynamics over time. Despite these criticisms, TCE remains a prominent theory in organizational economics and strategic management research.

The theory was relevant to the current study since it emphasizes the importance of minimizing transaction costs associated with coordinating economic activities across supply chains. By avoiding potential risks through strategies such as vertical integration or long-term supplier contracts, firms can reduce uncertainty and transaction costs, leading to improved financial performance. Therefore, the theory helped in explaining the effect of supply chain risk avoidance on financial performance of manufacturing firms in Nakuru County.

2.3 Empirical Review

This section reviews empirical literature on the supply chain risk mitigation strategy on financial performance, supply chain risk monitoring strategy on financial performance, supply chain risk avoidance strategy on financial performance and supply chain risk transfer strategy on financial performance.

2.3.1 Supply Chain Risk Mitigation Strategy and Financial Performance

Njeri (2023) did a study on the effects of risk mitigation strategies on the financial performance of manufacturing firms in Kenya. The study adopted a descriptive approach and study targeted 46 large manufacturing companies in Nairobi. It used primary data that was collected through a self-administered questionnaire using both qualitative and quantitative methods. The study concluded that most frequently

ST. PAUL'S UNIVERSITY

occurring risk is production (failures in internal systems, processes and people, or from external factors) therefore the need for proper risk mitigation planning.

Kihara (2019) did a study on the effect of risk mitigation costs on financial performance of manufacturing firms listed in the Nairobi Securities Exchange in Kenya. The study adopted a correlation approach and panel data design. The population of the study was the 10 manufacturing firms listed at the Nairobi securities exchange in Kenya. The study relied on secondary data and it found out that the manufacturing firms should consider risk mitigation cost in their budget planninghe study revealed that insurance costs and audit costs play a significant role in the operations of firms. Companies strive to secure the most optimal insurance services to mitigate risks, as this enhances stakeholders' confidence in the firm's ability to handle future uncertainties effectively.

Kraude, Narayanan and Talluri (2022) did/carried out a study on evaluating the performance of supply chain risk mitigation strategies using network data envelopment analysis. The study constructed a network data envelopment analysis (NDEA) model to assess risk mitigation investments by considering the cost of the strategies, performance outcomes, and interdependencies among the different stages of the supply chain. Risk mitigation strategies were measured at the supplier, manufacturing and customer segments of a firm's supply chain. The study revealed that efficiency analysis showed that NDEA provides a more holistic and useful assessment of supply chain risk mitigation performance.

Pham, Testorelli and Verbano (2022) did a structured literature review on supply chain risk mitigation and its impact on performance. The review synthesized and analyzed 48 papers published in journals from 2006 to 2020 based on the following criteria: risk type, impact mechanisms of risk (i.e., direct and indirect), performance, research method, research setting and risk mitigation strategy. The findings concluded that the impact of risk on performance is complicated and influenced by factors such as antecedents, mediators, and moderators.

Ngii (2019) did a study on the effects of supply chain risk mitigation on organization performance of Accelar Global Logistics. The study used quantitative research with a target population of 50 staff at Accelar Global logistics services. Stratified sampling

ST. PAUL'S UNIVERSITY

technique was used and the research methodology included both primary and secondary data; both interviews and questionnaires were used. The study concluded that supply chain risks affect organizations' performance in the event that they materialize. Therefore, there was need for organizations to identify risk exposure, analyze the risk exposure and have in place mitigation plans for the risk identified within their supply chain.

2.3.2 Supply Chain Risk Monitoring Strategy and Financial Performance

Kiprop and Tenai (2019) did a study on the effect of risk monitoring on performance of financial institutions. The study used explanatory research design and stratified random sampling to select respondents from target population comprising managers of 46 commercial banks, 52 Micro Finance institutions (MFIs) and 200 SACCOs and a sample size of 239 respondents was obtained. Data was collected using questionnaires. Descriptive statistics were presented, while inferential statistics were done/analysed using Pearson product moment correlation. The study found that the risk monitoring had positive relationship on performance of financial institutions.

Talet et al. (2019) examined risk monitoring and financial performance through better knowledge-based risk processes. The research utilized quantitative research method through questionnaires and the combined responses of 135 people employed in ten IT companies across Jordan. The findings suggested that improving risk monitoring has a constructive effect to acclimating knowledge-based risk identification and knowledge-based risk analysis.

Wadesango, Mhaka, Shava and Wadesango (2019) did a literature review on the effectiveness of risk management systems on financial performance in a public setting. The study highlighted that the lack of risk-based audits has negatively impacted the financial performance of ministries. Without an audit committee dedicated to risk identification, assessment, and monitoring, the Internal Audit Function (IAF) has been inefficient in carrying out its audit plan. As a result, this has allowed fraudulent activities to persist.

Mutuku (2020) did/carried out a study on the effects of risk management on the financial performance of commercial banks in Kenya. The study obtained primary data through an organized survey. The survey was done using a structured

ST. PAUL'S UNIVERSITY

questionnaire conveyed/distributed to the 42 Commercial Banks in the nation. Secondary data was obtained from the specific banks websites and published financial results. The research concluded that risk management mitigation strategies significantly affected the financial performance of commercial banks except for capital adequacy and risk monitoring which had a negative effect.

2.3.3 Supply Chain Risk Avoidance Strategy and Financial Performance

Anderson, Park and Sharma (2019) investigated the relationship between supply chain risk avoidance and sustainability practices in the pharmaceutical industry. The study surveyed 100 pharmaceutical companies and analyzed financial data using a quantitative research design. Results indicated that companies adopting risk avoidance measures, such as stringent supplier screening and contingency planning, demonstrated higher levels of sustainability performance, including ethical sourcing practices and waste reduction initiatives.

Chavez (2022) did a study on the supply chain risk avoidance on sustainability of the coffee industry in Colombia. This qualitative study utilized interviews and focus group discussions to explore risk avoidance strategies in the coffee supply chain in Colombia. The sample comprised 25 stakeholders selected through purposive sampling. Thematic analysis was employed to identify and categorize risk avoidance practices. Findings highlighted strategies such as crop diversification and fair-trade certification, emphasizing their role in promoting sustainable coffee production.

Guo (2021) did a study on the implementation of supply chain risk avoidance on sustainabilityin the textile sector in Bangladesh. Using a mixed-methods approach, this research combined surveys and interviews to examine risk avoidance strategies in the textile supply chain in Bangladesh. The sample included 50 textile manufacturers selected through stratified random sampling. Quantitative data were analyzed using statistical techniques, while qualitative data underwent thematic analysis. Results revealed that practices such as waste reduction and supplier collaboration are effective in mitigating sustainability risks.

Ochola, Lucas and Nyamita (2022) did a study on the effects of risk avoidance on performance of devolved governments in Kenya. The study was anchored on the Agency and Stakeholder Theories. A correlational research design was used and the

ST. PAUL'S UNIVERSITY

study targeted 423 respondents in the 47 devolved governments departments in Kenya. A sample size of 381 respondents from the devolved governments departments was drawn from the targeted population using stratified sampling technique. The collecetd primary data using questionnaires. Analysed data wewre presented using tables. The findings indicated that risk avoidance had a statistically considerable effect on performance of devolved governments in Kenya.

Mwangi (2018) did a study on the effects of risk management on financial performance of commercial banks in Kenya. Data was collected from Central Bank and banks financial reports. Multiple regression analysis was used in data analysis. From the findings, the study concluded that there was a strong positive relationship between risk management and financial performance of commercial banks in Kenya. The study also found that there was a negative relationship between credit risk, insolvency risk, interest rate sensitivity and financial performance of commercial banks. The study further revealed that there was a positive relationship between capital adequacy, size of the banks, operational efficiency and financial performance of commercial banks.

2.3.4 Supply Chain Risk Transfer Strategy and Financial Performance

Patel and Wu (2018) investigated the impact of supply chain risk transfer on sustainability performance in the energy sector. Using a longitudinal research design, the study analyzed data from 20 energy companies over a five-year period. Results indicated that organizations utilizing risk transfer mechanisms, such as outsourcing and joint ventures, experienced improved sustainability outcomes, including reduced carbon emissions and enhanced community engagement. These findings highlighted the potential of risk transfer strategies to support sustainable supply chain management practices.

Kwame (2022) did/carried out a study on the supply chain risk transfer on sustainability of the cocoa industry in Ghana. This qualitative study investigated risk transfer mechanisms in the cocoa supply chain in Ghana. Through interviews and document analysis, data were collected from 20 key stakeholders involved in cocoa production and trade. Thematic analysis was employed to identify and analyze risk transfer practices. The findings revealed that forward contracts and crop insurance

ST. PAUL'S UNIVERSITY

were commonly used to transfer sustainability-related risks, such as climate variability and pest infestation, contributing to the resilience of the cocoa industry.

Rahman and Marize (2021) examined the effectiveness of supply chain risk transfer mechanisms in promoting sustainability in the mining industry in South Africa. Employing a mixed-methods approach, the studys surveyed 50 mining companies and conducted in-depth interviews with industry experts. The findings revealed that risk transfer mechanisms, such as insurance and contractual agreements, played a crucial role in mitigating sustainability-related risks, including environmental pollution and community displacement. The study underscored the importance of integrating sustainability considerations into risk transfer strategies.

Magulu and Owiti (2021) focused on exploring the supply chain risk transfer on Sustainability of the aquaculture sector in Homabay. Using a mixed-methods approach, this research examined risk transfer strategies in the aquaculture supply chain in Homabay. Surveys and interviews were conducted in 30 aquaculture companies and among the stakeholders. Quantitative data were analyzed using statistical techniques, while qualitative data underwent thematic analysis. Results indicated that risk transfer mechanisms, such as aquaculture insurance and contractual agreements were effective in addressing sustainability risks, including water pollution and disease outbreaks.

Zhang and Xing (2022) examined the impact of entrepreneurial orientation and risk sharing on organizational performance influencing the role of news media and public opinion. A quantitative research approach was utilized. Data were collected from 450 managers of SMEs with the help of a questionnaire that was adapted from previous studies. A simple random sampling technique was used to collect data. The findings of the study showed that the relationship between entrepreneurial orientation, risk sharing, and organizational performance was positive and significant. The findings also showed that news media significantly mediated this relationship and public opinion moderated the relationship between news media and organizational performance.

Tallaki and Bracci (2021) did/carried out a study on risk allocation, transfer and management in public–private partnership and private finance initiatives. The study

ST. PAUL'S UNIVERSITY

conducted a systematic literature review from 1990 to 2018 using the Scopus database. Moreover, the research trend was on the rise in developing countries and quantitative methods for risk management in PPP research and qualitative methods in practice were preferred. The study found that the focus of research on PPPs has shifted from an overall risk transfer and allocation approach to individual risk analysis.

Tse, Zhang and Jia (2018) analysed the effects of risk and reward sharing on quality performance. The hypothesized model, based on Agency Theory, was empirically verified by original survey data of 200 Chinese manufacturing companies using the structural equations modeling approach. The study revealed that supplier involvement and task programmability are two significant antecedents of risk and reward sharing. Further, the study showed that risk and reward sharing have a positive effect on quality performance; however, in terms of contribution to quality performance, risk and reward sharing may be substitution practices.

2.3.5 Financial Performance

Anitha (2018) studied factors affecting the financial performance of manufacturing firms listed in the Nairobi Securities Exchange in Kenya. The study employed a longitudinal design to analyze the determinants of financial performance in manufacturing firms listed in NSE Kenya. The target population and sample size of the study was ten manufacturing firms listed in Kenya. The study used secondary data which were obtained from audited financial reports. The study established that firm size had a significant influence on the financial performance of manufacturing firms listed in NSE. The correlation analysis showed that an increase in firm size led to a rise in the financial performance of manufacturing firms listed in NSE Kenya.

Maji, Laha, and Sur (2022) assessed the factors affecting the financial performance of firms. The study conducted an exploration of the existing research works. The results of the study indicated that liquidity, leverage and productivity positively affect firm performance, while solvency and asset turnover are positive and statistically significant only in the case of return on equity. The study concluded that labor productivity induced firms tend to display larger efforts to keep financial performance

ST. PAUL'S UNIVERSITY

in the face of a crisis, considering that the crisis reveals a negative statistical impact on return on assets.

Le and Tram (2021) conducted a study on factors affecting business performance of manufacturing enterprises. The study surveyed 285 manufacturing enterprises in central Vietnam as a representative sample, through which the research analyzed the current status of the operation of manufacturing enterprises in Central Vietnam. Besides, the study gave specific policy suggestions through the current situation and research model to improve business performance for manufacturing enterprises in Central Vietnam in the future.

Kim, Duvernay and Thanh (2019) examined the determinants of financial performance of listed firms manufacturing food products in Vietnam. The study targeted 30 listed food processing companies in Vietnam from 2014 to 2019. STATA software was used to analyze data and the study employed a regression analytical technique. The study found that total assets turnover ratio (ATR) and growth in sales significantly influence financial performance, when measured by return on equity (ROE) or return on sales (ROS). The study concluded that leverage has a significant negative impact on return on sale.

ST. PAUL'S UNIVERSITY

2.4 Summary of the Research Gaps

Table 1: Summary of the Research Gaps

Author(s)	Focus of the Study	Findings	Gaps	How to address the gaps
Njeri (2023)	Effects of risk mitigation strategies on the financial performance of manufacturing firms in Kenya.	Most frequent occurring risk failures in internal systems, processes and people or from external factors therefore the need for proper risk mitigation planning.	However, the study adopted a mixed-methods approach, study was limited to large manufacturing firms in Nairobi, which may not represent manufacturing firms in other regions.	The current study focused on the supply chain risk monitoring on financial performance of manufacturing firms in Nakuru County.
Pham, Testorelli, Verbano (2022)	Supply chain risk mitigation and its impact on performance	The impact of risk on performance is complicated and influenced by many factors namely antecedents, mediators, and moderators	The study was a structured literature review and did not involve primary data collection or empirical analysis.	The current study collected primary data through semi-structured questionnaires to provide empirical insights.
Mutuku (2020)	Effect of risk mitigation on the financial performance of commercial banks in Kenya	Risk mitigation strategies significantly affected the financial performance of commercial banks with an exception of capital adequacy and risk monitoring which had a negative effect.	The study was conducted on commercial banks, which have different risk profiles and financial performance metrics compared to manufacturing firms.	The study targeted manufacturing firms in Nakuru County, ensuring sector-specific insights.
Kiprop and Tenai (2019)	The effect of risk monitoring on performance of financial institutions.	The study found that risk monitoring had positive relationship on performance of financial institutions.	The study used explanatory research design and stratified random sampling. However, it did not specify the detailed statistical methods used in inferential analysis beyond Pearson product moment correlation.	The current study employed a descriptive research design and use both simple and multiple regression analyses to establish relationships among variables.
Wadesango, Mhaka Shava	The effectiveness of risk management systems on	The study highlighted that inadequate risk-based audit has	The study used systematic literature review and did not	The current study collected primary data through structured

and Wadesango (2019)	financial performance in a public setting.	negatively affected the financial performance of ministries	involve primary data collection or empirical analysis.	questionnaires and use empirical analysis. It provided specific strategies for risk monitoring and directly link them to financial performance.
Onwubuya (2022)	Effect of risk assessment practices on the financial performance of Small and Medium Scale Enterprises in Anambra State	Risk identification and analysis had a beneficial impact on the financial performance of SMEs in Anambra State.	The study focused on SMEs in Nigeria and lacked of focus on manufacturing firms in Nakuru County.	The study focused on the manufacturing firms in Nakuru County and establish a direct link between risk assessment practices and financial performance in that context.
Kiprop and Yegon (2019)	Effect of risk analysis on performance of financial institutions	Risk analysis had a positive relationship with the performance of financial institutions.	The study used explanatory research design. The study used stratified random sampling with a sample size of 239. Questionnaires were used to collect data.	The current study adopted a descriptive research design and a census technique to focus on the effect of supply chain risk assessment on financial performance of manufacturing firms in Nakuru County
Chavez, (2022)	Supply chain risk avoidance on sustainability of the Coffee Industry in Colombia.	Strategies such as crop diversification and fair-trade certification, emphasizing their role in promoting sustainable coffee production.	The study was conducted in the coffee industry in Colombia, which operates under different economic and regulatory environments compared to manufacturing firms in Nakuru County.	The current study used a quantitative approach with structured questionnaires and statistical analysis to explore various risk transfer strategies and their impact on financial performance in manufacturing firms in Nakuru County.
Ochola, Lucas and Nyamita (2022)	The effect of risk avoidance on performance of devolved governments in Kenya	The findings indicated that risk avoidance had a statistically considerable effect on performance of devolved governments in Kenya.	The study used a correlational research design and targeted devolved governments in Kenya. The study focused on devolved governments in Kenya.	The current study adopted a descriptive research design and focus on risk transfer strategies in manufacturing firms in Nakuru County.
Mwangi	Effect of risk management	There was a strong positive	The study used multiple	The current study focused on

(2018)	on financial performance of commercial banks in Kenya	relationship between risk management and financial performance of commercial banks in Kenya.	regression analysis and data from Central Bank and banks' financial reports to examine risk management in commercial banks in Kenya.	risk transfer strategies in manufacturing firms in Nakuru County using a descriptive research design.
Patel and Wu (2018)	The impact of supply chain risk transfer on sustainability performance in the energy sector	There is a high potential of risk transfer strategies to support sustainable supply chain management practices	The study employed a longitudinal research design and analyzed data from 20 energy companies, focusing on sustainability outcomes.	The current study used descriptive design focusing on risk avoidance in manufacturing firms. It employed a structured questionnaire and statistical analysis to explore financial performance impacts.

2.5 Conceptual Framework

A conceptual framework is a structure or model that outlines the key concepts, variables and relationships relevant to a particular study or research endeavor. It provides a theoretical foundation to help in understanding the phenomenon under investigation and guides the formulation of research questions, hypotheses and the overall research design. In essence, a conceptual framework helps researchers organize their thoughts, identify important factors to consider and develop a coherent approach to studying the topic of interest.

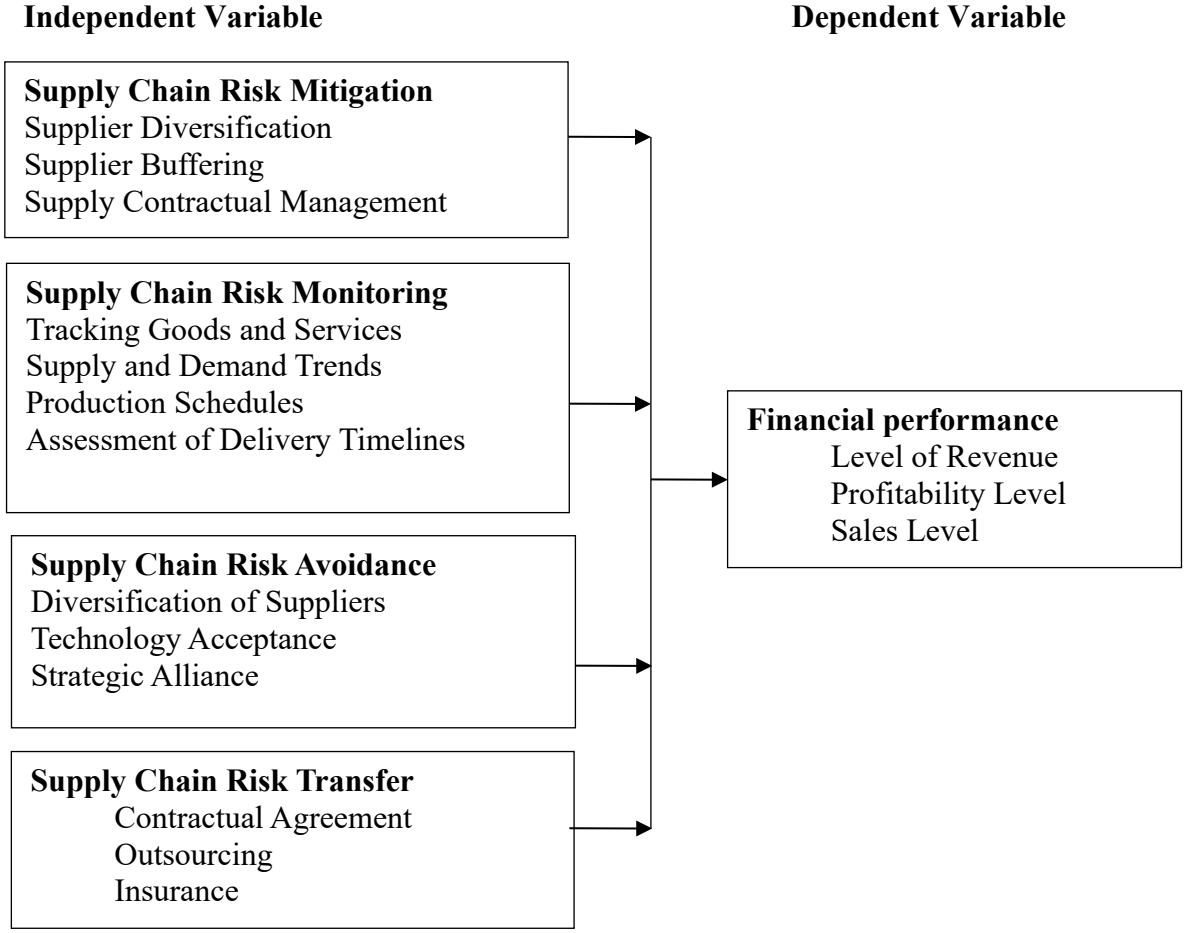


Figure 1: Conceptual Framework

Source: Own Conceptualization

Supply chain risk mitigation is the practice of reducing the impact of potential risks by developing a plan to manage, eliminate or limit setbacks as much as possible. After management creates and carries out the plan, they monitor progress and assess whether or not they need to modify any actions. Risk mitigation positively impacts the financial performance of manufacturing firms by reducing potential losses and enhancing stability. Implementing risk mitigation strategies, such as diversifying

suppliers, maintaining robust safety protocols and investing in advanced technologies, helps firms minimize disruptions and operational inefficiencies.

Supply chain risk monitoring involves an organization's framework for staying aware of its current risk exposure, including the implemented risk management system and any other activities that inform the organization's supply chain risk decisions. Risk monitoring significantly enhances the financial performance of manufacturing firms by ensuring continuous oversight and prompt recognition of potential threats. By regularly tracking and assessing risks, firms can swiftly respond to emerging issues before they escalate into major disruptions.

Supply chain risk avoidance strategies involve measures such as diversifying supplier networks, investing in redundant production facilities, or redesigning processes to reduce dependencies. By implementing these strategies, manufacturing firms can mitigate the financial impact of disruptions by building resilience into the supply chain. This resilience helps minimize the occurrence and severity of disruptions, reducing costs associated with production delays, inventory write-offs or lost sales revenue, thus positively impacting financial performance.

Supply chain risk transfer strategies involve outsourcing certain risks to third parties or purchasing insurance coverage to protect against potential losses. By transferring the financial risk to external entities, manufacturing firms can mitigate their exposure to potential losses while maintaining operational continuity and financial stability. This allows firms to focus on their core business activities while external entities manage specific risks, thus contributing to overall financial performance by reducing the impact of disruptions on profitability.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter discusses the study design, the target population, the sample size and the sampling technique. It also includes the research instruments, pilot testing, data collection techniques and data analysis and procedures that was done in this study.

3.2 Research Design

According to Dubey and Kothari (2022), research design is the arrangement of conditions for data collection and analysis in a manner that aims to combine relevance to research purpose with economy in research procedure. The study adopted explanatory research design which was ideal for this study because it sought to explain the relationships between supply chain risk management strategies and financial performance of manufacturing firms in Nakuru County. This design allowed the study to go beyond mere descriptions and establish cause-and-effect linkages between variables. By using this design, the study determined how strategies such as risk mitigation, monitoring, avoidance, and transfer directly influenced the financial outcomes of the firms.

3.3 Target Population

According to Mugenda (2013) a population comprises individuals, cases or objects sharing common observable characteristics. The unit of analysis was 52 manufacturing firms in Nakuru County. The study included manufacturing firms located within Nakuru County that had been registered with the Kenya Association of Manufacturers (KAM) and were actively operational. By targeting KAM-registered firms, the study ensured that it gathered information from recognized and credible entities within the manufacturing sector. Firms that had not been registered with KAM, located outside Nakuru County, or had permanently ceased operations were excluded from the study. This exclusion ensured a focus on currently operational firms within Nakuru County, providing insight into how effective supply chain risk management strategies contribute to their financial resilience and performance. The unit of observation was 52 supply chain managers and 52 finance managers from the 52 manufacturing companies in Nakuru County. Therefore, the total population of the

study was 104 respondents. Supply chain managers were selected/chosen as a target population because they were directly responsible for managing the flow of goods, information and finances throughout the supply chain. Finance managers, on the other hand, were responsible for overseeing financial aspects such as budgeting, financial planning and financial performance evaluation. The 52 manufacturing firms were targeted based on their operational status within Nakuru County and their relevance to the study's focus on supply chain and financial management practices.

3.4 Census Technique

Since the study population was manageable, the study adopted census to include all the 104 targeted respondents. Census design is a study of every unit, everyone or everything in a population. The primary advantage of the census technique is that it provides a complete and accurate representation of the entire population. Since data was collected from every individual or unit within the population, there was no risk of sampling error or bias.

3.5 Data Collection Instruments

The study used a close-ended questionnaire. Close-ended questions facilitated the collection of quantitative data, allowing for straightforward analysis of responses related to supply chain risk management strategies and their impact on the financial performance of manufacturing firms. By providing predefined response options, closed-ended questions enabled respondents to answer quickly and efficiently, increasing the response rate and ensuring that data collection was systematic and consistent across participants.

3.6 Data Collection Procedures

During data collection, the study first sought ISERC ethical approval from St. Paul University. After the ethical approval, the researcher applied for an introduction letter. Using the introduction letter the researcher applied for Nacosti Permit. After receiving all the necessary permits and approvals, the researcher then proceeded to visit the manufacturing firms. During this introductory visit, the reseacher further informed the manager of the sampled manufacturing firms about the research study. To ensure data protection of the respondents, the study strictly adhered to ethical guidelines and maintained confidentiality. On the appointed dates, the reseacher then visited the

respondents at their respective offices with the printed questionnaires for distribution. The reseacher then issued the questionnaires to the study respondents using a drop-off and pick-up method. The reseacher then collected questionnaires after two weeks. This time was allocated for the respondents to fill in the questionnaires, which was meant to improve the response rate.

3.7 Pilot Study

A pilot study is a small-scale preliminary study conducted to evaluate feasibility, duration, cost, and potential issues in the design and implementation of a larger, more comprehensive research project. A pilot study was conducted in Kiambu County, where 10 questionnaires were administered to Bidco Oil Industries in Thika Town, representing 10% of the sample size. The questionnaires in the pilot test were not included in the main study.

3.7.1 Validity of Research Instrument

Orodho (2015) defines validity as how well research findings represent the phenomenon under inquiry. There are two types of validy; face and content. Face validity is the likelihood of a question being misinterpreted. To ensure face validity, careful attention was given to crafting questionnaire items in a clear and understandable manner, avoiding ambiguous language that could lead to misinterpretation by respondents. Additionally, pilot testing was conducted with a sample of participants to assess their understanding of the questions and identify any potential areas of confusion or ambiguity, allowing for necessary revisions to enhance the clarity and comprehensibility of the questionnaire items.

Content validity, also known as logical validity, measures how well a measure represents all aspects of a social construct. Content validity ensures that the research instruments, such as the interview schedule, adequately cover all relevant aspects of the research topic. To achieve content validity, the study sought expert input to ensure they comprehensively addressed the research objectives and relevant dimensions of supply chain risk management strategies in the context of manufacturing firms in Nakuru County.

3.7.2 Reliability of Research Instrument

Reliability of a research instrument refers to its ability to consistently generate uniform grades or data through repeated trials (Kothari, 2012). Reliability enables

researchers to measure errors and address them effectively. The bigger the error, the smaller the reliability and vice versa. Having a sample of people who are not part of the main study fill out the questionnaire first increases its dependability. The measure of internal consistency chosen is Cronbach's Alpha. The degree to which different test items that examine the same concept get the same results is known as internal consistency reliability. Alpha needs to be increased. According to what Kothari (2012) found in a large sample, reliability of 0.70 or above is considered satisfactory.

3.8 Data Analysis and Presentations

Data analysis comprises cutting the acquired information into a manageable size, coming up with summaries, looking for patterns and applying statistical techniques. The data gathered/collected in this study was both quantitative and qualitative in nature. Quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive and inferential statistics were employed in the study. Descriptive statistics involved the use of percentages, frequencies, and measures of central tendencies, including mean and measures of dispersion, such as standard deviation. Inferential statistics involved the use of correlation and multiple regression analysis. After analysis, quantitative data was presented in the form of tables.

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots i$$

Y represents Financial Performance of Manufacturing Firms
β_0 represents Constant Term
X_1 represents Supply Chain Risk Mitigation Strategy
X_2 represents Supply Chain Risk Monitoring Strategy
X_3 represents Supply Chain Risk Avoidance Strategy
X_4 represents Supply Chain Risk Transfer Strategy
ε represents Error Term

$\beta_1, \beta_2, \beta_3, \beta_4$, Represents Regression Coefficients for Independent Variables.

3.9 Diagnostic Test

3.9.1 Multicollinearity Test

The multicollinearity test is essential in regression analysis because it examines whether independent variables are highly correlated with each other. Multicollinearity occurs when one or more independent variables can be linearly predicted with a high

degree of accuracy by other independent variables in the model (Sekaran & Bougie, 2010). If multicollinearity is present, it becomes challenging to determine the individual effect of each independent variable on the dependent variable as their influence may overlap.

For this study, the multicollinearity test was critical because it ensured that the independent variables chosen for the model were not redundant. The study calculated the Variance Inflation Factor (VIF) and Tolerance (1/VIF) to assess the degree of multicollinearity. Independent variables with VIF values between 5 and 10 indicated moderate to severe multicollinearity, which may distort the regression results. If multicollinearity was detected, highly correlated variables were either removed or combined into composite variables to avoid misleading conclusions. Addressing multicollinearity ensured the integrity of the regression coefficients and strengthened the overall model's validity making it more reliable for inference.

3.9.2 Normality Test

A normality test is essential to determine whether the sample data follows a normal distribution, which is a key assumption for parametric tests like regression analysis. Normality is crucial because, in regression models, residuals (the differences between observed and predicted values) are assumed to be normally distributed. Violation of this assumption can lead to biased estimates and incorrect inferences.

In this study, the Kolmogorov-Smirnov test was employed to check whether the data was normally distributed. These tests are commonly used because they provide a statistical basis for determining whether the distribution deviated from normality. A significance level of 5% was used for this test. Ensuring normality was especially important for this study because a normal distribution of residuals guaranteed that the statistical tests (such as t-tests for regression coefficients) were valid, thus improving the robustness of the study's findings.

3.9.3 Autocorrelation Test

Autocorrelation refers to the correlation of residuals (errors) over time or across observations in a dataset. If the residuals are autocorrelated, it implies that they are not independent, which violates one of the assumptions of ordinary least squares (OLS) regression. The presence of autocorrelation can lead to inefficient estimates and result in underestimated standard errors, thereby inflating the significance of predictors.

This study utilized the Durbin-Watson test to detect the presence of autocorrelation in the regression model. The Durbin-Watson statistic ranges from 0 to 4, with a value close to 2 indicating no/absence of autocorrelation. Autocorrelation was particularly important for this study because if the residuals were not independent, the model may have failed to capture the true relationships between variables, leading to inaccurate conclusions about the effect of supply chain risk mitigation, supply chain risk monitoring, supply chain risk avoidance and supply chain risk transfer on financial performance of manufacturing firms. By identifying and correcting for autocorrelation, the study ensured that the regression estimates were efficient and reliable for inference.

3.9.4 Homoscedasticity Test

Homoscedasticity refers to the assumption that the variance of errors is constant across all levels of the independent variables. When the variance of errors differs across values of an independent variable, it indicates heteroscedasticity, which can lead to biased estimates and invalid significance tests. In the presence of heteroscedasticity, the confidence intervals become unreliable, and the p-values may not reflect the true significance of the predictors.

The study conducted the Modified Wald test to check for heteroscedasticity. If heteroscedasticity was detected, White's heteroscedasticity-corrected standard errors was used to adjust the model, ensuring that the results were robust and free from bias. Homoscedasticity was particularly important for this study because unbiased estimates were crucial when analyzing the effects of independent variables on the dependent variable. Correcting for heteroscedasticity enhanced the accuracy of the model and ensured that the study's conclusions about budget allocation and program outcomes were sound.

3.10 Ethical Considerations in the Research Study

The first step of ethical consideration was to seek permission from all the relevant bodies. In this case, the study first sought clearance from ISERC and NACOSTI. The study then presented the letters to the management of targeted manufacturing firms. Before data collection, the study informed the respondents about the purpose of the research. An explanation was given on the significance of the research findings to them. The study conformed to the principle of informed consent, in which the

respondents were encouraged to participate in the study willingly. The study assured the respondents that the information they provided would be utilized for the purpose of the study only and that the information obtained would be treated with utmost confidentiality.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter represents the study findings on the effect of supply chain risk management strategies on financial performance of manufacturing firms in Nakuru County. The chapter starts by illustrating the response rate which is the number of respondents who successfully respondeded to the questionnaire. The chapter also illustrates descriptive results for demographic data followed by descriptive results for the study variables. In addition the chapter illustrates diagnostic test results as well as the inferential statistics results.

4.2 Response rate

The study distributed 104 questionnaires out of which 80 were successfully filled in and returned. This represented a response rate of 77%. A response rate of 60% is generally deemed acceptable in research with higher rates providing greater confidence in the representativeness of the sample (Baruch & Holtom, 2018). Therefore 77% response rate was sufficient for the analysis.

Table 2: Response Rate

No of Issued Questionnaires	No of Returned Questionnaires	Response Rate
104	80	77

4.3 Pilot Test Results

Piloting was done in Kiambu County, where 10 questionnaires were administered to supply chain officers at Bidco Oil Industries in Thika Town. The findings of the pilot results are shown in Table 3.

Table 3: Reliability Test Results

Variable	No. of Items	Cronbach's Alpha Value
Supply Chain Risk Mitigation	6	.874
Supply Chain Risk Monitoring	6	.889
Supply Chain Risk Avoidance	7	.899
Supply Chain Risk Transfer	6	.899
Financial Performance	5	.798

Source: Researcher (2024)

From the findings, supply chain risk mitigation exhibited a Cronbach's alpha value of .874. Similarly, supply chain risk monitoring, exhibited a a Cronbach's alpha value of .889. Furthermore, supply chain risk avoidance displayed a Cronbach's alpha value of .854. In addition, supply chain risk transfer had a Cronbach's alpha value of .899, Finally, financial performance had a Cronbach's alpha value of .798. From the findings, the Cronbach alpha of all the variables was above the threshold of 0.7, which implied that they were reliable. In addition, the study conducted content validity by consulting the supervisor. From the findings, the supervisor confirmed that the questionnaire was valid.

4.4 Demographic Information

4.4.1 Gender of the Respondents

The study sought to assess the gender of the respondents, the findings were as indicated in Table 4.

Table 4: Gender of the Respondents

Gender	Frequencies	Percentages
Male	45	56
Female	35	44
Total	**80**	**100**

Source: Researcher (2024)

From the findings, 54% of the respondents were male, while 46% were female. This implied that majority of the employees at manufacturing firms in Nakuru County were male. Gender-diverse teams can leverage a wider network of contacts and relationships, which can be beneficial in building and maintaining strong supplier relationships. Diverse teams may also be better equipped to understand and cater to the needs of a diverse supplier base leading to improved collaboration and performance.

4.4.2 Highest Education Qualification Attained

The study sought to assess the respondents' highest education level at manufacturing firms in Nakuru County. The findings are presented in Table 5.

Table 5: Highest Education Qualification Attained

Education Qualification	Frequency	Percentage
Certificate	15	19
Diploma	26	32
Undergraduate	31	39
Master's Degree	6	7
PhD	2	3
Total	**80**	**100**

Source: Researcher (2024)

From the findings, 19% of the respondents revealed that they had a certificate level of education, 32% indicated that they had a diploma education, 39% indicated that they had an undergraduate degree, 7% indicated that they had postgraduate education, while 3% had a PhD education level. This implied that the majority of employees at manufacturing firms in Nakuru County had diploma and undergraduate education. Educated supply chain professionals possess the knowledge and skills necessary to analyze complex data and make informed decisions. Their understanding of supply chain theories, methodologies and best practices enables them to develop effective strategies that optimize the flow of materials, reduce costs and improve overall efficiency.

4.4.3 Length of Service

The study sought to assess the length of service provided by employees at manufacturing firms in Nakuru County. The findings were as indicated in Table 6.

Table 6: Length of Service

Length of Services	Frequency	Percentage
Less than 3 Years	9	11
3-9 Years	18	23
10-15 Years	25	31
More than 15 Years	28	35
Total	**80**	**100**

Source: Researcher (2024)

From the findings, 11% had worked in the organization for less than 3 years, 23% had worked in the organization for 3-9 years, 31% had worked in the organization for 10-15 years, while 35% had worked in the organization for over 20 years. This implied

that majority of the employees at state corporations operating in the manufacturing firms in Nakuru County had worked for the organizations for more than 15 years and 11-15 years. Experienced supply chain managers have practical insights gained from years of handling various supply chain scenarios. This experience allowed them to make informed decisions quickly and effectively, addressing issues and optimizing processes based on a deep understanding of past challenges and solutions.

4.4.4 Position/ranking of Employees

The respondents were asked to state the position they hold in the organization. The results are as indicated in Table 7.

Table 7: Position of Employees

Position of Employees	Frequency	Percentage
Supply Chain Manager	46	58
Finance Manager	34	42
Total	**80**	**100**

Source: Researcher (2024)

From the findings, 58% of the respondents in manufacturing firms within Nakuru County were a supply chain manager while 42% of the respondents held a position of a finance manager. The findings indicated that the supply chain management position had the highest representation.

4.5 Descriptive Statistics

4.5.1 Supply Chain Risk Mitigation and Financial Performance

The study aimed to assess the effect of supply chain risk mitigation on financial performance of manufacturing firms in Nakuru County. The findings are shown in Table 8.

Table 8: Supply Chain Risk Mitigation and Financial Performance

Statements	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Std
Supply chain diversification leads to cost efficiencies through competitive pricing and negotiation leverage	40	48	2	6	4	4.369	.722
Diversified supply chains enhance the manufacturing firm's ability to respond quickly to changes in market conditions	38	52	2	8	0	4.351	.767
Buffer stocks held by suppliers mitigate the impact of supply disruptions	34	50	12	2	2	4.345	.692
Buffer stocks provide flexibility in production planning and scheduling	44	50	0	4	2	4.273	.689
Clear and well-defined supply contracts allocate risks between the manufacturing firm and its suppliers	54	32	5	7	5	4.396	.723
Contractual agreements establish performance metrics and expectations for suppliers	41	39	15	3	2	3.869	1.023
Aggregate						**4.267**	**0.769**

From the findings, 40% of the respondents strongly agreed that supply chain diversification leads to cost efficiencies through competitive pricing and negotiation leverage, 48% agreed, 2% were neutral, 6% disagreed while 4% strongly disagreed with a Mean of 4.369 and standard deviation of 0.722. When a company works with multiple suppliers, it gains increased bargaining power. The presence of alternative suppliers provides leverage during negotiations as suppliers know that losing a contract could result in losing the business to a competitor. This leverage enables companies to negotiate more favorable contract terms, such as discounts, extended payment terms, or added value services, which contribute to cost efficiencies.

Also, 38% of the respondents strongly agreed that diversified supply chains enhanced the manufacturing firm's ability to respond quickly to changes in market conditions, 52% agreed, 2% were neutral, 8% disagreed while none strongly with a mean of 4.351 and standard deviation 0.767. Further, 34% of the respondents strongly agreed that buffer stocks held by suppliers mitigated the impact of supply disruptions, 50% agreed, 12% were neutral, 2% disagreed while 2% strongly disagreed that buffer stocks held by suppliers mitigated the impact of supply disruptions with a mean of

4.345 and standard deviation 0.692. The findings agree with those of Njeri (2023) who revealed that buffer stocks are a crucial component of supply chain management, offering a buffer against uncertainty and helping to ensure a smooth and reliable supply of goods. Balancing the benefits with the associated costs is key to effective inventory management

Regarding buffer stocks providing flexibility in production planning and scheduling, 44% of the respondents strongly agreed, 50% agreed, none were neutral, 4% disagreed, and 2% strongly disagreed, with a mean of 4.273 and standard deviation of 0.689. Additionally, 54% of the respondents strongly agreed that clear and well-defined supply contracts allocated risks between the manufacturing firm and its suppliers, 32% agreed, 5% were neutral, 7% disagreed while 2% strongly disagreed with a mean of 4.396 and standard deviation of 0.723. Clearly defined contracts outlined the specific responsibilities of both parties, including delivery schedules, quality standards and performance metrics. This clarity helped in preventing misunderstandings and ensured that both the manufacturing firm and the supplier have a mutual understanding of their obligations.

Moreover, 41% of the respondents strongly agreed that contractual agreements established performance metrics and expectations for suppliers, 39% agreed, 15% were neutral, 3% disagreed while 2% strongly disagreed that with a mean of 3.869 and standard deviation of 1.023. The study findings are in line with those of Kraude, Narayanan and Talluri (2022) who revealed that contractual agreements with well-defined performance metrics and expectations are essential for managing supplier relationships effectively. They help to ensure that suppliers deliver on their commitments, maintain quality standards, and contribute to the overall success of the supply chain

4.5.2 Supply Chain Risk Monitoring on Financial Performance

The study aimed to assess the effect(s) of supply chain risk monitoring on financial performance of manufacturing firms in Nakuru County. The results are shown in Table 9.

Table 9: Supply Chain Risk Monitoring on Financial Performance

Statements	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Std
Tracking goods and services help manufacturing firms to detect potential risks and disruptions in the supply chain early	38	52	2	8	0	4.244	0.950
Accurate tracking of goods and services enables optimized inventory management practices	49	41	2	8	0	4.107	1.016
Understanding supply and demand trends helps manufacturing firms forecast customer demand more accurately	35	45	7	13	0	3.869	1.023
Insight into supply and demand trends facilitates better production planning and resource allocation	29	41	18	12	0	3.631	1.152
Production schedules help manufacturing firms allocate resources, including labor, equipment, and raw materials, efficiently	39	43	10	9	0	3.735	1.134
Monitoring delivery timelines allows manufacturing firms to identify inefficiencies or bottlenecks in the supply chain	38	42	15	5	0	4.351	0.767
Aggregate						3.990	1.007

According to the findings, 38% of respondents strongly agreed that tracking goods and services helped manufacturing firms to detect potential risks and disruptions in the supply chain early, 52% agreed, 2% were neutral while 8% disagreed with a mean of 4.244, and a standard deviation of 0.950. Tracking systems provide real-time visibility into the movement of goods and services throughout the supply chain. This allows manufacturing firms to monitor the status of shipments, inventory levels, and order progress, helping them detect deviations from the planned schedule promptly.

Also, 49% of the respondents strongly agreed that accurate tracking of goods and services enables optimized inventory management practices, 41% agreed, 2% were neutral 8% disagreed with a mean of 4.107 and a standard deviation of 1.016. Moreover, 35% of the respondents strongly agreed that understanding supply and demand trends helps manufacturing firms forecast customer demand more accurately, 45% agreed, 7% were neutral while 13% disagreed with a mean of 3.869 and a standard deviation of 1.023. The study findings were in tandem with those of Talet et al., (2019) who explained that understanding supply and demand trends enables manufacturing firms to forecast customer demand more accurately, leading to improved inventory management, production planning, financial performance, and customer satisfaction. Effective forecasting practices help in navigating uncertainties and achieving operational excellence.

Furthermore, 29% of the respondents strongly agreed that insight into supply and demand trends facilitated better production planning and resource allocation, 41% agreed, 18% were neutral while 12% disagreed with a mean of 3.631 and a standard deviation of 1.152. In addition, 39% of the respondents strongly agreed that production schedules helped manufacturing firms allocate resources, including labor, equipment, and raw materials, efficiently 43% agreed, 10% were neutral while 9% disagreed with a mean of 3.735 and a standard deviation of 1.134. Moreover, 38% of the respondents strongly agreed that monitoring delivery timelines allowed manufacturing firms to identify inefficiencies or bottlenecks in the supply chain, 42% agreed, 15% were neutral while 5% disagreed with a mean of 4.351 and a standard deviation of 0.767. The findings were in line with those of Mutuku (2020), who posits that monitoring delivery timelines is essential for identifying inefficiencies and bottlenecks in the supply chain. By leveraging tracking systems, analyzing performance data, and collaborating with suppliers, manufacturing firms can enhance operational efficiency, reduce costs, improve customer satisfaction and effectively manage risks.

4.5.3 Supply Chain Risk Avoidance on Financial Performance

The study aimed to assess the effect of supply chain risk avoidance on financial performance of manufacturing firms in Nakuru County. The results were shown in Table 10.

Table 10: Supply Chain Risk Avoidance on Financial Performance

Statement	SA %	A %	U %	D %	SD %	Mean	Std
Diversifying suppliers help manufacturing firms reduce reliance on a single supplier	26	47	17	10	0	3.887	0.907
Diversify suppliers allows for flexibility in sourcing decisions	37	45	13	5	0	4.113	0.870
Diversify suppliers enable manufacturing firm to adapt to changing market conditions	55	42	3	0	0	4.516	0.565
Dual sourcing provides access to a wider range of suppliers	57	37	6	0	0	4.500	0.621
Strategic alliance allows for the sharing of resources, and capabilities	29	41	12	10	8	3.631	1.152
Strategic alliance allows the firm to pool resources and expertise from multiple partners	39	38	10	13	0	3.631	1.152
Aggregate						4.046	0.878

From the findings, 26% of the respondents strongly agreed that diversifying suppliers helped manufacturing firms reduce reliance on a single supplier, 47% agreed, 17% were neutral, 10% disagreed, and none strongly disagreed with a mean of 3.887 and a standard deviation of 0.907. in addition, 37% of respondents strongly agreed that diversifying suppliers allowed for flexibility in sourcing decisions, 45% agreed, 13% were neutral, 5% disagreed, and none strongly disagreed with a mean of 4.113 and a standard deviation of 0.870. By having a diverse supplier base, firms can access a range of products and services from different sources. This diversity allows for greater flexibility in choosing suppliers based on price, quality, and other factors, ensuring that the firm can adapt to changing needs and conditions.

Further, 55% strongly agreed, 42% agreed, 3% were neutral while none disagreed or strongly disagreed that diversify suppliers enable manufacturing firm to adapt to changing market conditions with a mean of 4.516 and a standard deviation of 0.565. The study findings are in tandem with Chavez, (2022) who stated that supplier

diversification is a powerful strategy for manufacturing firms to adapt to changing market conditions, manage risks and enhance overall supply chain performance.

Similarly, 57% of the respondents strongly agreed that dual sourcing provided access to a wider range of suppliers, 37% agreed, 6% were neutral, while none disagreed or strongly disagreed with a mean of 4.500 and a standard deviation of 0.621. Moreover, 29% strongly agreed that strategic alliance allows for the sharing of resources, and capabilities, 41% agreed, 12% were neutral, 10% disagreed, and 8% strongly disagreed with a mean of 3.631 and a standard deviation of 1.152. Strategic alliances enable firms to pool their resources, such as technology, capital and expertise. By combining these resources, partner firms can achieve economies of scale, reduce costs and enhance their overall capabilities.

Furthermore, 39% strongly agreed that strategic alliance allowed the firm to pool resources and expertise from multiple partners, 38% agreed, 10% were neutral, 13% disagreed with a mean of 3.631 and a standard deviation of 1.152. The study findings agree with the findings of Ochola, Lucas and Nyamita (2022) who concluded that strategic alliances offer manufacturing firms a powerful way to pool resources and expertise, expand market reach and drive innovation.

4.5.4 Supply Chain Risk Transfer on Financial Performance

The study aimed to assess the effect of supply chain risk transfer on financial performance of manufacturing firms in Nakuru County. The results were shown in Table 11.

Table 11: Supply Chain Risk Transfer on Financial Performance

Statements	SA	A	N	D	SD	Mean	STD
Contractual agreement clearly defines roles and responsibilities, reducing potential disputes	50	34	3	7	0	3.984	1.032
Contractual agreement provides safeguard the financial interests of the parties involved	45	34	13	8	0	4.145	0.921
Insurance coverage offers financial reimbursement for losses incurred due to specified risks covered by the insurance policy	49	38	5	8	0	4.145	0.807
Insurance coverage enables the manufacturing firm to recover quickly from disruptions	52	37	8	3	0	4.452	0.592
Supplier risk-sharing agreements promotes collaboration and joint problem-solving	50	32	13	5	0	4.210	0.908
Supplier risk-sharing agreements enables the firm to shares the financial burden of risk management activities	45	45	5	5	0	4.258	0.886
Aggregate						4.199	0.858

From the findings, 50% of the respondents strongly agreed that contractual agreement clearly defined roles and responsibilities reducing potential disputes, 34% agreed, 3% were neutral, 7% disagreed, and none strongly disagreed with a mean of 3.984 and a standard deviation of 1.032. Further, 45% of the respondents strongly agreed that contractual agreement safeguarded the financial interests of the parties involved, 34% agreed, 30% were neutral, 8% disagreed and none strongly disagreed with a mean of 4.145 and a standard deviation of 0.921. Moreover, 49% strongly agreed that insurance coverage offered financial reimbursement for losses incurred due to specified risks covered by the insurance policy, 38% agreed, 5% were neutral, 8% disagreed and none strongly disagreed with a mean of 4.145 and a standard deviation of 0.807. The study findings agree with those of Kwame, (2022) who concluded that

insurance coverage plays a vital role in providing financial protection against specified risks, offering peace of mind and supporting business continuity. By understanding the components of insurance coverage and selecting the right policy, individuals and businesses can effectively manage risks and safeguard their financial well-being

Moreover, 52% of the respondents strongly agreed that insurance coverage enabled the manufacturing firm to recover quickly from disruptions, 37% agreed, 8% were neutral, 3% disagreed and none strongly disagreed with a mean of 4.452 and a standard deviation of 0.592. Insurance provides financial compensation for physical damages to manufacturing facilities, equipment, and inventory caused by events such as fires, floods or accidents. This compensation helps to cover the costs of repairs or replacements, enabling the firm to resume operations more swiftly.

Additionally, 50% of the respondents strongly agreed that supplier risk-sharing agreements promoted collaboration and joint problem-solving, 32% agreed, 13% were neutral, 5% disagreed, and none strongly disagreed with a mean of 4.210 and a standard deviation of 0.908. Furthermore, 45% strongly agreed that supplier risk-sharing agreements enabled the firm to share the financial burden of risk management activities, 45% agreed, 5% were neutral, 5% disagreed with a mean of 4.258 and a standard deviation of 0.886. The study agreed with the findings of Magulu and Owiti (2021) who concluded that supplier risk-sharing agreements provide a collaborative approach to managing risks, reducing financial burdens, and enhancing overall supply chain resilience. By carefully implementing and managing these agreements, firms and their suppliers can build stronger relationships, improve risk management strategies, and achieve mutual success.

4.5.5 Financial Performance of Manufacturing Firms

The study aimed to assess the effect(s) of participative management on the financial performance of manufacturing firms in Nakuru County. The results were shown in Table 12.

Table 12: Financial Performance of Manufacturing Firms

Statements	SA	A	N	D	SD	Mean	Std
The firm has recorded an increase in revenue for the past two years	18	64	6	12	0	3.855	1.185
Sustainable revenue growth often indicates that a company has a competitive advantage in its industry	42	32	12	14	0	4.403	0.778
The market share of the firm has increased for the past two years	30	40	18	12	0	4.307	0.738
The company has higher market value over the competitors	42	30	16	12	0	4.145	0.807
Companies with higher market values often have easier access to capital through equity financing, debt issuance	52	32	6	10	0	4.387	0.869
Aggregate						4.219	0.875

The findings indicated that 18% of the respondents strongly agreed that the firm had recorded an increase in revenue for the past two years, 64% agreed 6% were neutral, while 12% disagreed with a mean of 3.855 and a standard deviation of 1.185. Also, 42% of the respondents strongly agreed that sustainable revenue growth often indicated that a company had a competitive advantage in its industry, 32% agreed, 12% were neutral, while 14% disagreed with a mean of 4.403 and a standard deviation of 0.778. In addition, 30% of the respondents strongly agreed that the market share of the firm had increased for the past two years, 40% agreed, 18% were neutral, while 12% disagreed that employees express high level of satisfaction for the past five years with a mean of 4.307 and a standard deviation of 0.738. According to Mwangi (2018), high levels of employee satisfaction over an extended period indicate a well-managed and supportive workplace environment. By maintaining the factors that contribute to satisfaction and addressing any emerging issues, organizations can continue to reap the benefits of a satisfied and engaged workforce.

Further, the findings revealed that 42% of the respondents strongly agreed that the market share of the firm had increased for the past two years, 30% agreed, 16% were neutral while 12% disagreed with a mean of 4.145 and a standard deviation of 0.807. In addition, 52% strongly agreed that the company had a higher market value over the competitors, 32% agreed, 6% were neutral and 10% disagreed with a mean of 4.387 and a standard deviation of 0.869. Further, 45% of the respondents strongly agreed that companies with higher market values often had easier access to capital through equity financing, debt issuance, 40% agreed, 13% were neutral, while 2% disagreed with a 4.371 and a standard deviation of 0.607. Mutuku (2020) demonstrated that higher market values enhance a firm's ability to access capital through both equity financing and debt issuance. This access supports growth, operational flexibility, and financial health.

4.6 Diagnostic Test

4.6.1 Multicollinearity Test

The study conducted a multicollinearity assumption test to determine whether the variables were correlated. Multicollinearity occurs when two or more independent variables are highly correlated with each other. When multicollinearity is present in a regression model, it can be difficult to determine the unique contribution of each independent variable to the outcomes. The study results were presented in Table 13.

Table 13: Multicollinearity Assumption Test Results

Variables	Tolerance	VIF
Supply Chain Risk Mitigation	.162	6.172
Supply Chain Risk Monitoring	.363	2.755
Supply Chain Risk Avoidance	.889	1.125
Supply Chain Risk Transfer	.775	1.290
Financial Performance	.592	1.689

From the finding the tolerance and variance inflation factor value for supply chain risk mitigation was (tolerance=0.162 and VIF=6.172), for supply chain risk monitoring (tolerance=0.363 and VIF=2.755), for supply chain risk avoidance (tolerance=0.889 and VIF=1.125) for supply chain risk transfer (tolerance=0.775 and VIF=1.290) and for financial performance (tolerance=0.592 and VIF=1.689). The study results implied that all tolerance values for the five variables under study were all above 0.10 and VIF values were all less than 10, hence data used had no

multicollinearity. This is in line with Fox, (2015) who argued that for research to be accepted, the Tolerance for all independent variables should be more than 0.1 and the variance inflation factor (VIF) is recommended to be below 10.

4.6.2 Normality Test

The first diagnostic test that the study conducted was normality test to determine whether the data was normally distributed**.** The result of the normality test was indicated in Table 14.

Table 14: Normality Test Results

Variable	Kolmogorov- Smirnov	Sig
Supply Chain Risk Mitigation	.282	.667
Supply Chain Risk Monitoring	.228	.877
Supply Chain Risk Avoidance	.236	.912
Supply Chain Risk Transfer	.174	.871
Financial Performance	.236	.877

The normality assumption test results in Table 14 established that the data was normally distributed since the significance values for Kolmogorov-Smirnov were greater than 0.05. The study findings indicated that supply chain risk mitigation had a Kolmogorov-Smirnov significance value of p=.282>0.05, supply chain risk monitoring had a Kolmogorov-Smirnov significance value of p=.228>0.05, supply chain risk avoidance had a Kolmogorov-Smirnov significance value of p=.236>0.05, supply chain risk transfer had a Kolmogorov-Smirnov significance value of p=.174>0.05 and financial performance had a Kolmogorov-Smirnov significance value of p=.236>0.05. Since the p-values were greater than the significance level (0.05), this implied that the data were normally distributed. This is in line with Freeman (2017) who argued that when the sig value is less than the 0.05 thresh hold data is normally distributed.

4.6.3 Autocorrelation Test

Autocorrelation refers to the correlation of a variable with itself over time. When autocorrelation is present, it implies that the current value of the variable is related to its past values. This can lead to biased estimates of the regression coefficients, as the effect of the independent variables may be attributed to the auto correlated error term rather than the true relationship between the variables. The results of the test of autocorrelation assumption were presented in Table 15.

Table 15: Autocorrelation Test Results

Variable	Durbin-Watson
Supply Chain Risk Mitigation	1.342
Supply Chain Risk Monitoring	2.145
Supply Chain Risk Avoidance	2.234
Supply Chain Risk Transfer	1.345
Financial Performance	1.987

Source: Survey Data (2023)

The results as indicated in Table 15 revealed that the Durbin- Watson statistic value of supply chain risk mitigation was 1.342, supply chain risk monitoring was 2.145, duration of supply chain risk avoidance was 2.234 and for the supply chain risk transfer was 1.345, and for financial performance was 1.987. This implied that the study variables had no autocorrelation because they met the threshold of Durbin-Watson. This in line with Stock and Watson (2017) who suggest that values around 2 indicate no autocorrelation, values below 2 suggest positive autocorrelation and values above 2 indicate negative autocorrelation.

4.6.4 Homoscedasticity

Homoscedasticity is a statistical concept that refers to the assumption of constant variance in the errors (or residuals) of a regression. The study sought to determine homoscedasticity using scatterplot diagram. The findings were indicated by the Scatter plot figure 2 below.

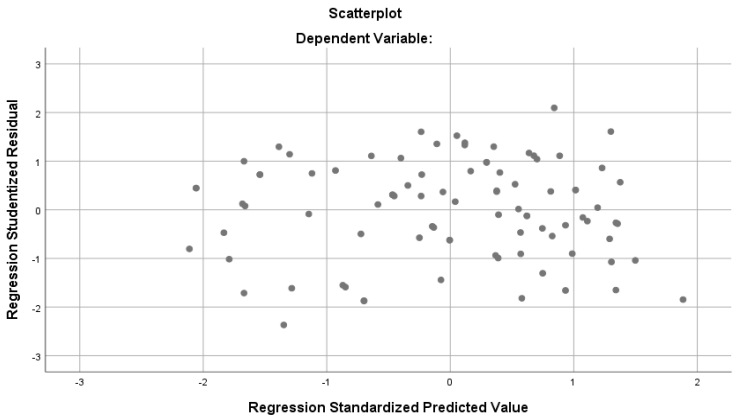


Figure 2: Homoscedasticity

From the findings, the spots were diffused and did not form a clear specific pattern, therefore, the regression model did not have homoscedasticity problem. This was in

line with Freedman (2016) who argued that the spread and dispersion of residuals across different values of predictors identify violations of homoscedasticity.

4.7 Inferential Statistics

4.7.1 Correlation Analysis

Correlation is a technique for/of investigating the relationship between two quantitative, continuous variables. The study adopted Pearson correlation analysis. Pearson's correlation coefficient (r) measure the strength of the association between the two variables.

Table 16: Correlation Analysis

		Supply Chain Risk Mitigation	Supply Chain Risk Monitoring	Supply Chain Risk Avoidance	Supply Chain Risk Transfer
Supply Chain Risk Mitigation	Pearson Correlation	1			
	Sig. (2-tailed)	056	1		
	N	80			
Supply Chain Risk Monitoring	Pearson Correlation	.416	.541	1	
	Sig. (2-tailed)	.076	089		
	N	80	80		
Supply Chain Risk Avoidance	Pearson Correlation	.981	.987	.641	1
	Sig. (2-tailed)	.059	.089	098	
	N	80	80	80	
Supply Chain Risk Transfer	Pearson Correlation	.974	.987	.976	.987
	Sig. (2-tailed)	.078	.098	067	098
	N	80	80	80	80
Financial Performance	Pearson Correlation	.473**	.541**	.641**	.741**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	80	80	80	80

As indicated/shown in Table 16, the study indicated that there was a moderate positive and statistically significant correlation between supply chain risk mitigation and financial performance of manufacturing firms in Nakuru County ($r=0.473$; $p<0.05$). This implied that better supply chain risk mitigation enhanced financial performance of manufacturing firms in Nakuru County. The findings agreed with Kihara (2019) who revealed that effective risk management strategies, such as

diversifying suppliers, investing in robust inventory systems and implementing predictive analytics allow firms to anticipate and respond swiftly to potential risks. This proactive approach minimizes downtime, maintains production efficiency, and ensures timely delivery of products, which collectively lead to lower operational costs and improved profit margins.

The study also indicated that there was a strong positive and statistically significant correlation between supply chain risk monitoring and financial performance ($r=0.541$; $p<0.05$). This implied that better supply chain risk monitoring enhanced the financial performance of manufacturing firms in Nakuru County. The findings matched with those of Mutuku (2020) who revealed that employing advanced monitoring tools and techniques, firms continuously track key performance indicators, identify vulnerabilities and assess risks across the supply chain. This early detection allows for timely interventions and adjustments, reducing the likelihood of costly delays, inventory shortages, or production stoppages. Improved risk monitoring also enhances decision-making by providing accurate data and insights, which helps in optimizing resource allocation and minimizing waste.

The study further indicated that there was a strong positive and statistically significant correlation between supply chain risk avoidance and financial performance ($r=0.641$; $p<0.05$). This implied that better supply chain risk avoidance enhanced the financial performance of manufacturing firms in Nakuru County. The findings are in line with Ochola, Lucas and Nyamita (2022) who concluded that by implementing strategies such as diversifying suppliers, securing long-term contracts and investing in reliable logistics infrastructure, firms can reduce their exposure to such risks as supply shortages, price volatility and transportation delays. Effective risk avoidance measures help to maintain consistent production schedules and avoid unexpected costs, thereby safeguarding profit margins and reducing financial instability.

The study also indicated that there was a strong positive and statistically significant correlation between supply chain risk transfer and financial performance ($r=0.741$; $p<0.05$). This implied that better supply chain risk transfer enhanced the financial performance of manufacturing firms in Nakuru County. The findings concur with Magulu and Owiti (2021) who concluded that by using mechanisms like insurance policies, contractual agreements and outsourcing, firms can mitigate the impact of

risks such as natural disasters, supply chain disruptions, or regulatory changes. This approach helps stabilize financial performance by protecting the firm from significant losses and unexpected expenses. Risk transfer also allows firms to focus on their core competencies while relying on specialized partners to manage specific risks, thereby improving the overall operational efficiency and reducing financial volatility.

4.7.2 Regression Analysis

4.7.2.1 Regression Model Summary

Table 17: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.867[a]	.752	.730	.36261

a. Predictors: (Constant), Supply chain risk mitigation, supply chain risk monitoring, supply chain risk avoidance, and supply chain risk transfer.

b. Dependent Variable: Financial performance of manufacturing firms in Nakuru County

The study conducted a regression analysis to find out the strength of the relationship between independent and dependent variables as shown in Table 17. The findings showed that the financial performance was 75.2 %, as explained by the independent variables under this study, while 24.8 % is the variation due to other factors that have not been covered in this study.

4.7.2.2 ANOVA of the Regression Model

Table 18: ANOVA of the Regression Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.930	4	4.483	56.747	.000[b]
	Residual	5.917	75	.079		
	Total	23.847	79			

a. Predictors: (Constant), Supply chain risk mitigation, supply chain risk monitoring, supply chain risk avoidance, and supply chain risk transfer

b. Dependent Variable: Financial performance of manufacturing firms in Nakuru County

In the ANOVA table above, the F statistic = 56.747, as illustrated in Table 18, indicates that the overall regression model is statistically significant (p = .000). Since the f calculated is greater than the f statistic, it means that the model was statistically significant. Therefore, there was strong evidence that the regression results were statistically significant, and the variation in the results was insignificant, which could not result in much difference in case of a change in the study units (population), and therefore, the model did for the data.

4.7.2.3 Multiple Regression Coefficients

Table 19: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1(Constant)	.627	.490		1.280	.207
Supply Chain Risk Mitigation	.016	.146	.016	.112	.011
Supply Chain Risk Monitoring	.231	.166	.220	1.390	.017
Supply Chain Risk Avoidance	.612	.207	.423	2.956	.005
Supply Chain Risk Transfer	.279	.131	.294	2.128	.039

The study conducted a regression analysis to establish the regression coefficients relationship between the independent and dependent variables. The value of the financial performance of manufacturing firms in Nakuru County without the effects of the predictor variables was 0.627. This explains that, at any given time, the financial

performance of manufacturing firms in Nakuru County would be 0.627, holding other factors constant at 0. According to the regression model, when all other variables or factors influencing financial performance (such as supply chain risk management strategies) were held constant at zero, the baseline level of financial performance for manufacturing firms in Nakuru County would still be 0.627. This value (0.627) represented the intercept, or the expected financial performance, when none of the independent variables affected it.

The results also illustrated that a unit change in supply chain risk mitigation would result in 0.016 times increase in financial performance of manufacturing firms in Nakuru County. The findings agree with a study by Kraude, Narayanan and Talluri (2022) who argue that through supply chain risk mitigation, firms are better equipped to prevent costly interruptions, ensuring smoother operations and consistent production. This, in turn, positively affects financial performance by reducing unexpected costs, maintaining revenue streams, and minimizing operational downtime, ultimately leading to improved profitability.

In addition the findings indicated that a unit increase in supply chain risk monitoring would result in 0.231 times increase in financial performance of manufacturing firms in Nakuru County. The findings agreed with a study by Talet et al., (2019) who argue that through supply chain risk monitoring, manufacturing firms can quickly identify emerging threats and address them before they could cause significant harm. Timely interventions help to avoid delays, reduce wastage and prevent financial losses. Effective monitoring ensures that potential disruptions are managed early, leading to greater financial stability and improved operational efficiency, which enhances overall financial performance.

Furthermore the findings indicated that a unit increase in supply chain risk avoidance would result in 0.612 times increase in financial performance of manufacturing firms in Nakuru County. The findings agreed with a study by Chavez, (2022) who argued that through supply chain risk avoidance, manufacturing firms reduce their chances of encountering financial difficulties caused by supply chain disruptions. Risk avoidance strategies contribute to financial performance by safeguarding the firm from uncertainties and ensuring that resources are allocated to stable and predictable supply chain operations.

Finally the findings indicated that a unit increase in supply chain risk transfer would result to 0.279 times increase in financial performance of manufacturing firms in Nakuru County as given by the coefficients in the model. The findings agreed with a study by Kwame, (2022) who argued that by transferring these risks, the firm reduces its exposure to financial loss, which can stabilize cash flows and enhance profitability. This practice protects the firm's financial performance by ensuring that even if disruptions occurred, the financial impact would be minimized, allowing the firm to maintain its financial health. The result are further indicated with this model

$Y = Y = 0.627 + 0.016X_1 + 0.231X_2 + 0.612X_3 + 0.279X_4$

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a detailed summary of the major findings and then draws conclusions from the findings. Lastly, the chapter also makes recommendations and suggestions on areas of further study. The main aim of this study was to determine the effect of supply chain risk management strategies on financial performance of manufacturing firms in Nakuru County.

5.2 Summary of Major Findings

The study sought to determine a summary of the key findings. The summary was categorized in terms of specific objectives.

5.2.1 Effect of Supply Chain Risk Mitigation Strategy on Financial Performance

The study sought to determine the effect of supply chain risk mitigation strategy on financial performance of manufacturing firms in Nakuru County. The findings of the study revealed that supply chain diversification led to cost efficiencies through competitive pricing and negotiation leverage. The findings also revealed that buffer stocks held by suppliers mitigated the impact of supply disruptions. Further, the study revealed that clear and well-defined supply contracts allocated risks between the manufacturing firm and its suppliers.

5.2.2 Effect of Supply Chain Risk Monitoring Strategy on Financial Performance

The study further sought to assess the effect of supply chain risk monitoring strategy on financial performance of manufacturing firms in Nakuru County. The study revealed that tracking goods and services helped manufacturing firms to detect potential risks and disruptions in the supply chain early enough. The study also revealed that understanding supply and demand trends helped manufacturing firms forecast customer demand more accurately. Moreover, the study revealed that production schedules helped manufacturing firms allocate resources, including labor, equipment and raw materials efficiently.

5.2.3 Effect of Supply Chain Risk Avoidance Strategy on Financial Performance

The study sought to establish the effect of supply chain avoidance strategy on financial performance of manufacturing firms in Nakuru County. The study revealed that diversifying suppliers helped manufacturing firms to reduce reliance on a single

supplier. In addition, the study revealed that diversification of suppliers allowed for flexibility in sourcing decisions and that dual sourcing provided access to a wider range of suppliers. Furthermore, the study revealed that strategic alliance allowed for the sharing of resources and capabilities.

5.2.4 Effect of Supply Chain Risk Transfer Strategy on Financial Performance

Further, the study examined the effect of supply chain risk transfer strategy on financial performance on manufacturing firms in Kenya. The findings of the study revealed that contractual agreement clearly defined roles and responsibilities reducing potential disputes. The findings of the study also revealed that insurance coverage offered financial reimbursement for losses incurred due to specified risks covered by the insurance policy. Moreover, the study revealed that supplier risk-sharing agreements promoted collaboration and joint problem-solving.

5.3 Conclusions

Based on the findings of the study on the effect of supply chain risk mitigation on financial performance, the study concluded that diversified supply chains enhance a manufacturing firm's ability to respond quickly to changes in market conditions. The study also concluded that buffer stocks provide flexibility in production planning and scheduling. The study concluded that contractual agreements establish performance metrics and expectations for suppliers. From the correlation analysis, the study concluded that there was a moderate positive and statistically significant correlation between supply chain risk mitigation and financial performance of manufacturing firms in Nakuru County ($r=0.603$; $p<0.05$). This implied that better supply chain risk mitigation enhanced the financial performance of manufacturing firms in Nakuru County.

According to the findings of the study on the effect of supply chain monitoring on financial performance, the study concluded that accurate tracking of goods and services enables optimized inventory management practices. Also, the study concluded that insight into supply and demand trends facilitates better production planning and resource allocation. Furthermore, the study concluded that monitoring delivery timelines allows manufacturing firms to identify inefficiencies or bottlenecks in the supply chain. From the correlation analysis, the study concluded that there was a strong positive and statistically significant correlation between supply chain risk

monitoring and financial performance ($r=0.753$; $p<0.05$). This implied that better supply chain risk monitoring enhanced the financial performance of manufacturing firms in Nakuru County.

From the findings of the study on the effect of supply chain risk avoidance on financial performance, the study concluded that diversifying suppliers allowed for flexibility in sourcing decisions. The study also concluded that dual sourcing provided access to a wider range of suppliers and strategic alliance allowed for the sharing of resources and capabilities. From the correlation analysis, the study concluded that there was a strong positive and statistically significant correlation between supply chain risk avoidance and financial performance ($r=0.690$; $p<0.05$). This implied that better supply chain risk avoidance enhanced the financial performance of manufacturing firms in Nakuru County.

Regarding the findings of the study on the effect of supply chain risk transfer, the study concluded that contractual agreement safeguarded the financial interests of the parties involved. Also, the study concluded that insurance coverage enabled the manufacturing firm to recover quickly from disruptions. Moreover, the study concluded that supplier risk-sharing agreements enabled the firms to share the financial burden of risk management activities. From the correlation analysis, the study concluded that there was a strong positive and statistically significant correlation between supply chain risk transfer and financial performance ($r=0.729$; $p<0.05$). This implied that better supply chain risk transfer enhanced the financial performance of manufacturing firms in Nakuru County.

5.4 Recommendations

From the findings, the study recommended that manufacturing firms in Nakuru County should strengthen their supply chain risk mitigation strategies. This could involve investing in supplier relationship management, diversifying their supplier base and improving internal controls to minimize vulnerabilities. Developing contingency plans and regularly assessing potential risks in the supply chain are also crucial to ensure financial stability and performance.

In addition, the study recommended that manufacturing firms should implement robust supply chain risk monitoring mechanisms. These mechanisms may include real-time tracking systems, regular audits and using advanced technology to monitor

supplier performance and potential disruptions. By improving risk visibility, firms can detect and address issues early, ultimately enhancing their financial performance.

The study also recommended that firms should focus on proactively avoiding high-risk scenarios in their supply chains. This could involve careful vetting of suppliers, avoiding over-reliance on single suppliers or regions prone to instability and selecting supply chain partners with strong financial and operational track records. Firms should also engage in strategic planning to anticipate and avoid potential risks before they escalate.

Finally, the study recommended that manufacturing firms should explore effective ways to transfer supply chain risks, such as purchasing insurance policies that cover potential disruptions or negotiating contracts that shift certain risks to suppliers. Additionally, firms should consider forming strategic alliances or partnerships to share risks with other organizations, especially in cases where collaborative efforts can enhance risk management efficiency and financial outcomes.

5.5 Limitations of the Study

In the course of conducting the study, the researcher encountered various limitations. One of the limitations was reluctance of some respondents who feared being victimized. To overcome this limitation, the study addressed response bias by ensuring confidentiality and anonymity in data collection. Some of the respondents had a very busy schedule at their work stations; nevertheless, the study overcame this limitation by adopting a drop and pick later strategy for two weeks which provided the respondents adequate time to answer the questionnaire in their spare time.

5.6 Suggestions for Further Study

The study suggested that further study should be conducted on the impact of supply chain risk management strategies on operational efficiency. While financial performance is a key outcome of risk management strategies, operational efficiency is another critical aspect. The study also suggested that a further study could be conducted on the role of supply chain risk management strategies in enhancing firm resilience. Resilience is crucial for firms to navigate and recover from disruptions. Examining how different risk management strategies bolster a firm's ability to

withstand and adapt to supply chain disruptions can provide insights into building robust systems that ensure long-term sustainability.

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APPENDICES

APPENDIX I: RESEARCH QUESTIONNAIRE

Dear respondent,

I am a student at St. Paul's University. Am required to submit a research project as a requirement for partial fulfillment of Master's Degree. As part of the course I am conducting a study on "Supply chain risk management strategies on financial performance of manufacturing firms in Nakuru County". I kindly equest your assistance in filling in the questionnaires provided. I also wish to assure you that the information given will be treated with utmost confidentiality and will be used for the sole purpose of this study.

Section A. RESPONDENTS DETAILS

1. What is your gender?
   - Male [ ]
   - Female [ ]
2. Highest education qualification attained
   - Certificate [ ]
   - Diploma [ ]
   - Undergraduate Degree [ ]

Master Degree [ ]
PhD [ ]

3. How long have you been working in this organization?
Less than 3 years [ ]
3-9 years [ ]
10-15 years [ ]
More than 15years [ ]

4. Which position do you hold in this organization?
Supply chain manager [ ]
Finance Manager [ ]

Section B: Supply Chain Risk Mitigation on Financial Performance

In a scale of 1-5, where; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=strongly indicate your level of agreement on the effect of supply chain risk mitigation on financial performance of manufacturing firms in Nakuru County

Supply Chain Risk Mitigation	5	4	3	2	1
Supply chain diversification leads to cost efficiencies through competitive pricing and negotiation leverage					
Diversified supply chains enhance the manufacturing firm's ability to respond quickly to changes in market conditions.					
Buffer stocks held by suppliers mitigate the impact of supply disruptions.					
Buffer stocks provide flexibility in production planning and scheduling.					
Clear and well-defined supply contracts allocate risks between the manufacturing firm and its suppliers.					
Contractual agreements establish performance metrics and expectations for suppliers.					

Section C: Supply Chain Risk Monitoring on Financial Performance

In a scale of 1-5, where; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=strongly indicate your level of agreement on the effect of supply chain risk monitoring on financial performance of manufacturing firms in Nakuru County

Supply Chain Risk Monitoring	5	4	3	2	1
Tracking goods and services help manufacturing firms to detect potential risks and disruptions in the supply chain early.					
Accurate tracking of goods and services enables optimized inventory management practices.					
Understanding supply and demand trends helps manufacturing firms forecast customer demand more accurately					
Insight into supply and demand trends facilitates better production planning and resource allocation.					
Production schedules help manufacturing firms allocate resources, including labor, equipment, and raw materials, efficiently.					
Monitoring delivery timelines allows manufacturing firms to identify inefficiencies or bottlenecks in the supply chain					

Section D: Supply Chain Risk Avoidance on Financial Performance

In a scale of 1-5, where; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly indicate your level of agreement on the effect of supply chain risk avoidance on financial performance of manufacturing firms in Nakuru County

Supply Chain Risk Avoidance	5	4	3	2	1
Diversifying suppliers help manufacturing firms reduce reliance on a single supplier					
Diversify suppliers allows for flexibility in sourcing decisions					
Diversify suppliers enable manufacturing firm to adapt to changing market conditions					
Dual sourcing provides access to a wider range of suppliers.					
Dual sourcing enhances firm's negotiating power with suppliers by providing alternatives					
Strategic alliance allows for the sharing of resources, and capabilities					
Strategic alliance allows the firm to pool resources and expertise from multiple partners					

Section E: Supply Chain Risk Transfer on Financial Performance

In a scale of 1-5, where; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=strongly indicate your level of agreement on the effect of supply chain risk transfer on financial performance of manufacturing firms in Nakuru County

Supply Chain Risk Transfer	5	4	3	2	1
Contractual agreement clearly defines roles and responsibilities reducing potential disputes.					
Contractual agreement provides safeguard the financial interests of the parties involved.					
Insurance coverage offers financial reimbursement for losses incurred due to specified risks covered by the insurance policy.					
Insurance coverage enables the manufacturing firm to recover quickly from disruptions					
Supplier risk-sharing agreements promotes collaboration and joint problem-solving					
Supplier risk-sharing agreements enables the firm to shares the financial burden of risk management activities					

Section F: Financial Performance of Manufacturing Firms

In a scale of 1-5, where; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=strongly indicate your level of agreement on the effect of supply chain risk transfer on financial performance of manufacturing firms in Nakuru County

Financial Performance	5	4	3	2	1
The firm has recorded an increase in revenue for the past two years.					
Sustainable revenue growth often indicates that a company has a competitive advantage in its industry.					
The market share of the firm has increased for the past two years.					
The company has higher market value over the competitors					
Companies with higher market values often have easier access to capital through equity financing, debt issuance					

Thank you for your Participation

APPENDIX II: LIST OF MANUFACTURING COMPANIES IN NAKURU COUNTY

Companies
1. Spin-Knit Limited
2. Umeshco Ltd
3. Trendy Links Limited
4. Bedi Investment
5. Terry Wool Ltd
6. Lamsons Industries
7. Nakuru Industries
8. Londra Ltd
9. Mega Spin
10. Yako Ltd
11. Nakuru Blankets
12. Bidco Oil Company Ltd
13. Kapa Oil Refineries Ltd
14. Menengai Oil Refineries Ltd
15. Pwani Oil Refineries Ltd
16. Gil Oil Refineries Ltd
17. Salwa Kenya Ltd
18. Darfords Industries Ltd
19. Golden Oil Refineries Ltd
20. Prime Mattress Ltd
21. Mega Pack (K) Limited
22. Mega Paper and Boards Limited
23. Unilever
24. Savannah Cement
25. Timsales
26. Comply Industries
27. Bahati Dairies
28. Happy Cow
29. New Kenya Co-Operative Creameries Ltd
30. Valley Bakers
31. Bunda Cake
32. Reliable Concrete
33. Kapi Limited
34. Mabati Bora
35. Pytex Botanical
36. Mayers
37. Botto Solar
38. Mola Plus
39. Dudutech
40. Verical Agro
41. KAPI
42. Benev Flora
43. Tosti Bakery
44. Meems Limited
45. Super Mabati

46. Royal Mabati Factory
47. Njoro Canning Factory
48. Mabati Rolling Mills
49. Maisha Mabati
50. Boma Mabati Factory
51. Century Mabati Limited
52. Nakuru Blankets

Source: Kenya Association of Manufacturers Annual Report, (2021)

APPENDIX III: APPROVAL LETTER

ST. PAUL'S UNIVERSITY

Private Bag 00217 Limuru,
Kenya
Email: office@spu.ac.ke
Website: www.spu.ac.ke

Tel Office: +254 (0) 20-2020505/10
Mobile: +254 (0) 728-669000
(0) 736-424440

REF: SPU/236/2024 **Date: 2nd September 2024**

TO: Alex Kiprotich
St. Paul's University

Dear Alex,

==========

REF: Supply Chain Risk Management Strategies and Financial Performance of Manufacturing Firms in Nakuru County

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Greetings,

This is to inform you that SPU- Institutional Scientific Ethics Review Committee has reviewed the above-named research proposal. **Your ERB approval number is 245, for the period between 2nd September 2024 – 2nd September 2025 (1 year).**

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SPU- Institutional Scientific Ethics Review Committee.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SPU- Institutional Scientific Ethics Review Committee within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect

the integrity of the research must be reported to *SPU- Institutional Scientific Ethics Review Committee* within 72 hours

v. Clearance for export of biological specimens must be obtained from relevant institutions.

vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.

vii. Submission of an executive summary report within 90 days upon completion of the study to SPU- Institutional Scientific Ethics Review Committee.

viii. Please note that it is within the ISERC's mandate to monitor your research and to do random visits to the site. All research is subject to post approval monitoring.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) ***https://research-portal.nacosti.go.ke*** **and also obtain other clearances needed.**

Yours sincerely,



Dr. Daniel Nzengya, PhD
Chairperson
SPU- Institutional Scientific & Ethics Review Committee



APPENDIX IV: RECOMMENDATION LETTER

ST. PAUL'S UNIVERSITY

Private Bag 00217 LIMURU, KENYA
Email: office@spu.ac.ke
Website: www.spu.ac.ke

Tel Office: 1254 (0) 20-2020505/10
Mobile: +254 (0) 728 - 669000
(0) 736 - 424440

BOARD OF POSTGRADUATE STUDIES

6th September, 2024

National Commission for Science and Technology,
P.O. BOX 30623-00100,
Nairobi.

Dear Sir/Madam,

RE: RECOMMENDATION FOR ALEX KIPROTICH – MBADIST303520 TO CONDUCT RESEARCH

This letter confirms the above-named person is a student in the Master of Business Administration (MBA) Program at St. Paul s University.

The second year consists of a major research work leading to a Thesis. The student's selected topic is:

"Supply chain risk management strategies and financial performance of manufacturing fimrs in Nakuru County."

Kindly grant this student the required permit.

DIRECTORATE OF POSTGRADUATE STUDIES
ST. PAUL'S UNIVERSITY
06 SEP 2024
P.O. BOX 343-00217 LIMURU

Dr. John Mukuhi
Director, Board of Postgraduate Studies

APPENDIX V: NACOSTI PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **900297**

Date of Issue: **13/September/2024**

RESEARCH LICENSE



This is to Certify that Mr.. ALEX KIPROTICH of St. Paul's University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nakuru on the topic: SUPPLY CHAIN RISK MANAGEMENT STRATEGIES AND FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN NAKURU COUNTY for the period ending : 13/September/2025.

License No: **NACOSTI/P/24/40011**

900297

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

APPENDIX VI: PLAGIARISM REPORT

ORIGINALITY REPORT

14%	11%	2%	1%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Kenyatta University Student Paper	2%
2	www.researchgate.net Internet Source	1%
3	Submitted to Saint Paul University Student Paper	1%
4	ir.jkuat.ac.ke Internet Source	1%
5	erepository.uonbi.ac.ke Internet Source	1%
6	Submitted to KCA University Student Paper	1%
7	Submitted to Kabarak University Student Paper	1%
8	ir.kabarak.ac.ke Internet Source	1%
9	erepo.usiu.ac.ke Internet Source	1%